

Sustainability as a Puzzle Will Be A Portuguese Utopia

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ABSTRACT: Sustainability is not a new topic, but it is on the agenda, particularly as it is increasingly discussed in forums, conferences, articles and academic dissertations. The number of scientific journals in the environmental, social and sustainability fields is growing all the time, as are specialised courses in the area. It is therefore clear that the topic of sustainability is not only important for companies and citizens, but also for the planet we live on, particularly the parts that make it up.

The aim of this study is to find out whether Portuguese companies are active in the field of sustainability and whether they publicise it and, if so, how. The aim is to ascertain what sustainability actions, measures or strategies are undertaken by companies. Also, if sustainability information is produced, what formats or means of communicating information are used, including quantitative and qualitative information. Finally, we want to find out whether the companies are concerned about minimising the social and environmental impacts that their business activity can have on the environment.

A sample of 16 Portuguese companies listed on the PSI of the Portuguese Stock Exchange as at 3rd April 2024 was selected to achieve the research objectives.

The study is based on a quantitative and qualitative approach. The technique used was a double investigation: on the one hand, their annual reports and websites were analysed, and, on the other hand, a questionnaire was sent out via email which was answered using the google forms platform.

The results show that companies use sustainability strategically in the medium and long term, and therefore consider the impacts of their activities on the environment, which is why the majority also believe it to be an essential issue in the eyes of the stakeholders who interact with them.

It was concluded that sustainability is a relevant issue for this sample, given that companies produce more internal information than external information, and disclose sustainability information in autonomous reports or together with the annual report and accounts, rather than in so-called sustainability reports. It should also be noted that most of the information produced is more qualitative than quantitative. In this case, it needs a standard to ensure comparability. However, more studies are needed to prove the capacity for understanding, reporting and practising sustainability actions outside this sample and in other parts of the world.

KEYWORDS: sustainability, sustainable development, information, indices, PSI.

I. INTRODUCTION

Talking about sustainability implies associating a range of issues related to the preservation of the environment (Hart, 1980), as a form of concern for social ecology (Lélé, 1988; Hart, 2005), with its strategic use by companies (Bansal, 2002), as a way of holding a competitive advantage (Dutra, 2008), designing flexible and intelligent companies in relation to their competitors due to the rate of cooperation, coordination and innovation between them (Boxall, 1996; Silveira & Miranda, 2011), as a new way of managing people (Liebowitz, 2010; Parente & Fischer, 2014), as a way for states to pour their policies into society (Porter & Van Der Linde, 1995), as a form of spatial and cultural demonstration (Sachs, 2002), as a purpose of favouring companies through their exercise (Wagner, 2010), as an emphasis on the business contribution to sustainable development (Hahn, Figge, Liesen & Barkemeyer, 2010), as a way of reacting to global pressures, changes in the community, technology, climate, politics, the financial world and demographic variations (Ulrich, 2011) and as a source of inspiration for scientific research in a wide range of areas such as strategy and organisations, operations and logistics management, science management and innovation technology (Marques, Kniess, Meira & Ruiz, 2017).

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It is therefore an interdisciplinary topic that requires professionals from different business areas to work together (Oliveira, Estivaleta, Andrade & Costa, 2017).

The advancement of the topic and the concept is due in particular to two major driving forces: economist Ignacy Sachs and sociologist John Elkington. Since 1986, Sachs has dedicated himself to the study of eco-development, social and economic harmonisation, the balance between urbanity and rurality, modernity and security in production processes, research and development of resource diversity and solidarity and social responsibility (Sachs, 2002). For the author, sustainability can be grouped into the following dimensions: social, economic, ecological, geographical, political and cultural (Silva, Silva and Rabbani, 2017). Almost a decade later, in 1994, Elkington centred his studies and concerns about sustainable development on a tripod by creating the Triple Bottom Line model based on the economic, social and environmental dimensions. The author states that sustainable development is just one of the objectives to be achieved, while sustainability is the way to achieve them. Through his studies, it became clear that there are differences between sustainability and sustainable development, both of which aim to attract stakeholders through the competitive advantages provided by these concepts (Santos, Filho & Santos, 2021). Elkington co-founded SustainAbility in 1987, a British consultancy for companies such as Hewlett Packard and Microsoft, which he chaired between 1995 and 2005, and which is dedicated to providing indications of economic, social and environmental improvement through socially responsible production and commercialisation (Mello & Mello, 2018). In 2008, he helped create Volans Ventures, an organisation that works at the intersection of the sustainability, innovation and entrepreneurship movements, i.e. it is a kind of market catalyst that is currently active in carbon production, innovative business models and innovative cities (http://siteuniethos.org.br/ci2012/?page_id=363).

Also noteworthy were the contributions made by the Our Common Future (1987) and Brundtland (1988) reports, which increased public discussion of the concept of sustainable development and future social commitment (Marcondes & Bacarji, 2010). The first report dealt with the definition of sustainable development based on the notion of sustainability. The second focussed on sustainable development and defined humanity's current commitment to enjoying resources and the environment without compromising future generations (Santos, Filho & Santos, 2021). A decade later, in 1997, the Global Reporting Initiative (GRI) came into being, standardising the way companies disclose information in their social responsibility and sustainability reports (Hahn & Kühnen, 2013; Trierweiler et al., 2013). This led to the emergence of a company performance indicator, the Dow Jones Sustainability Index (DJSI) (Favaro & Rover, 2014; Orsato et al., 2015). Other indicators followed, such as the stock market index on the São Paulo Stock, Commodities and Futures Exchange (BM&FBOVESPA) in Brazil since 2005, known as the Corporate Sustainability Index - ISE (Marcondes & Bacarji, 2010; Cunha & Samanez, 2012).

The aim of this index is to produce a comparative analysis of the performance of companies listed on the Brazilian Stock Exchange and to this end it carries out a survey to gauge how companies are doing in terms of economic efficiency, environmental balance, social justice and corporate governance (http://www.bmfbovespa.com.br/pt_br/produtos/indices/indices-de-sustentabilidade/indice-de-sustentabilidade-empresarial-ise.htm).

Table 1 summarises a set of indicators, not a comprehensive list, which merely serve as an example of the best that has been created around the world to measure sustainability and sustainable development.

Table 1 - Some sustainability indicators

Indicators	Description
GRI Indicators	<p>These indicators are a tool for communicating companies' social, environmental and economic performance. This organisation, GRI, is an accreditation process for companies that are subject to it. Its aim is to assess their sustainability (Araújo, Fernandes & Rauen, 2015, 17).</p> <p>This organisation publishes an annual report describing the Environmental Performance Indicators. The list of indicators is divided into: materials; energy; water; biodiversity; emissions, effluents and waste; suppliers; products and services; compliance and transport. In the indicators adopted by the GRI there is no indication of the units to be used and there are indicators that are difficult to measure and others that are subjective (http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf).</p> <p>The ISO standards were introduced in Portugal by the Portuguese Quality Institute (http://www.apee.pt/normalizacao/normas-publicadas). Many standards have already been disseminated by this national organisation, which can be summarised in the following list, although others could also be mentioned:</p>

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	<ul style="list-style-type: none"> — NP 4457: 2007: Research, development, and innovation management system. — NP ISO 9001:2008: Occupational Health and Safety Management System — NP 4397: 2008: Occupational safety and health management systems — NP4469-1: 2008: Social responsibility management system: part 1: Requirements and guidelines for its use. — NP4469-2: 2010: Social responsibility management system part 2: Guidelines for implementation. — NP 4460-1: 2007: Ethics in organisations: Part 1: Guidelines for the process of drawing up and implementing codes of ethics in organisations. — NP 4460-2: 2010: Ethics in organisations Part 2: Guidance for drawing up, implementing and operating codes of ethics in organisations. — NP ISO 26000: 2011: Guide to Social Responsibility. — NP 4522: 2014: Standard for Family Responsible Organisations.
<p>United Nations Commission on Sustainable Development</p>	<p>It presents 58 sustainability indicators (http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf).</p> <p>For 2030, the United Nations agenda sets the following sustainability goals (http://www.instituto-camoes.pt/images/ods_2edicao_web_pages.pdf):</p> <ol style="list-style-type: none"> 1. eradicate poverty 2. Eradicate hunger 3. Ensure universal access to quality health care 4. Guarantee universal access to quality education 5. Achieving gender equality 6. Ensure universal access to drinking water and sanitation 7. Ensure universal access to renewable energies 8. Promote decent work and economic growth 9. Promote industry, innovation and infrastructure 10. Reducing inequalities 11. Making cities and communities sustainable 12. Ensuring sustainable production and consumption 13. Combating and reducing impacts through active climate action 14. Protect marine life 15. Protecting terrestrial life 16. Promote peace, justice, and effective institutions. Reform means of partnership for the implementation of the Sustainable Development Goals.
<p>International Organisation for Standardization - ISO 14031</p>	<p>ISO 14001, version 2015, regulates environmental management systems and these systems allow companies to manage more sustainably by controlling the effects the company can have on third parties. Specifically, ISO 14031 deals with environmental management and in this context it is necessary to distinguish between two types of indicators: Environmental Performance Indicators (EPIs) and Environmental Condition Indicators (ECIs). It should be noted that some of these indicators are similar to those of the GRI. While the EPIs provide information on the environmental performance of the company's business by reporting on materials, energy, products, services, waste, emissions, equipment operation and maintenance, etc., the ECIs provide information on the state of the environment that is useful for analysing the company's overall environmental performance. Each indicator is designed so that its measurement method is an effective source of data on the following elements: water, energy, materials, waste, greenhouse effect and the ozone layer (http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf).</p> <p>Many other sustainability standards could be listed, but the following are suggested without ending the vast list:</p>

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	<ul style="list-style-type: none"> — ISO 20400 on sustainable purchasing. It is not a certification standard as it only defines guidelines for purchasing management procedures to be adopted when choosing natural resources and raw materials with a reduced impact on commercialised products. — ISO 50001 deals with energy management systems and its scope includes rationalising energy consumption. The standard's recommendations focus on how to reduce energy bills, whether through greater rationality in consumption or the alternative use of energies such as renewables. — ISO 14006 standardises Ecodesign, i.e. defines and leverages control procedures when designing products so that they can be controlled at every stage of their useful life. — ISO 20121 refers to sustainable event management systems. The value of the standard lies not in the event, but in minimising the impacts it can have on the community. In this sense, event promoters are obliged to comply with every indication laid down in this ISO, so that sustainable behaviour on the planet in which we live is achieved.
World Business Council for Sustainable Development (WBCSD)	<p>This organisation supported the creation of a guide for measuring a company's performance. It consists of a reduced set of indicators that assess eco-efficiency. The adoption of only a few indicators is due to an attempt to simplify the measures to be included in organisational performance reports, as well as to make it easier to compare company developments and industrial sectors (http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf).</p>
Consultative Group on Sustainable Development Indicators (CGSDI) Dashboard of Sustainability	<p>The Dashboard of Sustainability is an index made up of different indicators that together form a global sustainability index or Sustainable Development Index, SDI. This index is controlled by the International Institute for Sustainable Development and allows information to be presented on a graphical scale, at public or private, national, regional, local or sectoral level, etc. There are various forms that the information can take.</p>
World Conservation Union (UCA) – Wellbeing index	<p>This index assesses well-being or quality of life in terms of education, the environment, civic participation, governance, work and remuneration and economic vulnerability (https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaquas&DESTAQUESdest_boui=250254476&DESTAQUESmodo=2).</p> <p>At the Portuguese level, we can say that it has evolved positively in recent years. This measure is the result of combining various measures from different organisations such as the OECD and Eurostat (https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaquas&DESTAQUESdest_boui=250254476&DESTAQUESmodo=2).</p>
World Economic Forum - Environmental Sustainability Index (ESI)	<p>The ESI is made up of 22 indicators: air quality, water quantity, water quality, biodiversity, land systems, reduction of air pollution, reduction of water stress, reduction of ecosystem stress, reduction of waste and consumption pressures, reduction of population pressure, basic human subsistence, environmental health, science/technology, capacity for debate, control and management, private sector response, environmental information, eco-efficiency, reduction of public choice distortions, international commitment, financing/participation on a global scale and international protection of the commons (http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf).</p> <p>Together the indicators make it possible to provide a general assessment of the state of biodiversity and environmental well-being in order to gauge whether the values obtained are within normal parameters and whether there is a commitment to improving the results obtained. It also aims to assess the human impact on the environment, as well as whether a given country has the necessary and recognised institutions and</p>

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	specialists to work with environmental challenges (http://naturlink.pt/article.aspx?menuid=20&cid=2052&bl=1&viewall=true).
Global Scenario Group, U.S. Interagency Working Group on Sustainable Development Indicators (IWGSDI)	This organisation stands out for its work in creating sustainability indicators that are useful for decision-making at a country's political level in relation to the country's sustainable development dimension (http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf).
Corporate Sustainability Index (ISE)	This index seeks to demonstrate a country's level of sustainable development by analysing five dimensions: strategic leadership, human capital, sustainable production and consumption, energy and climate, and biodiversity and ecosystem services. Strategic leadership studies an organisation's strategic commitment to sustainability, corporate culture, environmental responsibility, investment prioritisation and the involvement of stakeholders. Human capital evaluates human resource management, skills training and society and the community as an influential and influenced environment. Sustainable production and consumption analyses production under the umbrella of sustainable development, sustainable consumption and the ability to guarantee customer satisfaction. Energy and climate analyse energy consumption and greenhouse gas emissions. Finally, biodiversity and ecosystem services deals with the protection of biodiversity in corporate strategy and the evaluation of ecosystem services (http://ose.pt/ise/ise).
DJSGI – Dow Jones Sustainability Group Index	The index was created in 1999 by the Swiss company Sustainability Asset Management and is a unique index associated with the study of the financial performance of companies that stand out for their sustainability in economic, environmental, social and risk and opportunity diagnosis terms. It is constructed using a group of 10 companies that stand out for their sustainability values, drawn from a pre-selected group of 64 industries chosen for inclusion in the DJSGI. The values obtained in terms of company sustainability are analysed using a questionnaire, the collection of various information and the policies and reports produced by the companies. The evaluation criteria are based on the best results, practices and auditing procedures which are standardised for all industries, although due to the specific nature of the businesses, the index also has more specific measures (http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf).
ETHOS Institute for Social Responsibility	One of the most important Brazilian organisations in the study of sustainability and corporate social responsibility. The ETHOS indicators are a personal assessment tool that a company makes of itself in order to improve its levels of corporate social responsibility. The indicators used are grouped in a questionnaire divided into 7 themes: Each of the indicators provides information that is mostly qualitative (http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf).
IBASE - Brazilian Institute of Social and Economic Analyses	It is a public organisation that aims to combat inequalities and promote the spirit of citizenship. Its main measure for expressing its premises is the social balance sheet. This balance sheet contains a number of different indicators, such as investment related to the production and operation of the company, investment in external programmes or projects, general consumption in production, increased efficiency in the use of natural resources, etc.

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	It is a useful tool for managing a company, particularly internally, so that it can identify weaknesses in terms of environmental performance and endeavour, within a framework of continuous improvement, to inform society and act ever better (http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf).
Ecological Footprint Method (EFM).	It is a tool to help understand the limits of the biosphere for a more sustainable life. It presents information in the form of a measure of hectares appropriate to the impact of consumption (Araújo, Fernandes & Rauen, 2015, 17).
Barometer of Sustainability – BS	The barometer is a project reserved for government departments and some even non-governmental organisations whose decision-making capacity on people and sustainable development is at a global level. It presents conclusions in a diverse visual format and provides a portrait of human and technological well-being (Araújo, Fernandes & Rauen, 2015, 17).
Human Development Index – HDI	This index measures human development based on three elements: longevity, knowledge and standard of living (Araújo, Fernandes & Rauen, 2015, 17).
Pressure, State, Response – PSR	This methodology for expressing the level of sustainability aims to inform about Pressure (P) the description of the pressure of human activities exerted on the environment, including natural resources, the State (S) which refers to the quality and quantity of natural resources and the quality of the environment, and finally the Response (R) which aims to identify the extent and intensity of society's reactions in replicating environmental concerns and changes (Araújo, Fernandes & Rauen, 2015, 17).
Driving Force, State, Response – DSR	This methodology for expressing the level of sustainability consists of preparing information on development and sectoral evaluation based on the PSR system, but introducing two more variables that alternate between Pressure by Directed Force (D) and State of Response (E) (Araújo, Fernandes & Rauen, 2015, 17).

Source: adapted from Araújo, Fernandes & Rauen, 2015, 17; Morioka & Carvalho, 2017, 518; http://www.abepro.org.br/biblioteca/ENEGEP2005_Enegep1002_0183.pdf.

Despite various efforts to measure sustainability, both by companies and by researchers, there are authors such as Morioka and Carvalho (2017) who argue that there is still much to be done before sustainability measurement is fully incorporated by companies. They therefore suggest that indicators are just a small step to be taken. Regardless of this, it is understood that it is necessary to create a sustainable awareness and this should start early in a child's education, and then continue in schools so that, as an adult, any individual does not need the rules and regulations of a state to practice or apprehend the meaning of sustainability.

2. THEORETICAL FRAMEWORK

Current knowledge of the subject has identified the supra-importance of bridging environmental, economic and social gaps by using a systemic and holistic approach (Sesana & Dell'Oro, 2024). At the United Nations Climate Change Conference (COP28) in December 2023 (United Nations Climate Change Conference COP28, 2024), the need to curb the ecological footprint and bring global warming down to 1.5 °C was emphasised, in compliance with the Paris Agreement (United Nations Climate Change Conference COP21, 2024). It seems, however, that there is much to be done to fulfil these goals, which are not very auspicious, but which lead us to look back and reflect on what has brought us this far.

Until the 1980s, research into sustainable development was non-existent (Guimarães, Rover & Ferreira, 2018) and in communion with the lack of concern for the planet, the environment and sustainability. Since then, it has gained momentum due to multiple factors such as demographics, urbanisation, climate change, pollution in general, government policies in favour of highly polluting industrial giants, the increase in poverty, wars, etc (Ribeiro, Jaime & Ventura, 2017). However, the issue has been debated over time with particular emphasis since the Stockholm Conference in 1972, as man has, for most of the centuries, shown a lack of interest in the damage he was causing to the planet (Aquino & Garcia, 2017). At this point, we are faced with two concepts that lead to a very close objective and that in the literature reviewed are mixed up and it seems relevant to differentiate between them (Freitas & Marques, 2019), sustainable development and sustainability. Sustainable development sees the future as one of using

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clean technologies (Marques, 2015) and balancing companies' economic, environmental and social problems (Savitz & Weber, 2007; Silva, Silva & Rabbani, 2017). This is a collective problem for society, for which it must hold those who cause damage individually responsible (Freitas & Marques, 2017). Sustainability is an action taken to resolve the energetic and physical-chemical conditions that preserve all living beings, guaranteeing their continuity without jeopardising present and future generations, i.e. it is a guarantee that natural capital is maintained and improved, taking into account its regeneration, multiplication and evolution (Boff, 2012). The rational and consistent use of available resources will guarantee the well-being of all generations (Kuzma, Doliveira & Silva, 2017). Either sustainable development or sustainability should not jeopardise the acquisition of profits or the accumulation of wealth by companies (Schaltegger, Hansen & Ludeke-Freund, 2016). These definitions do not exhaust what the literature says on the subject and their understandings can be summarised broadly in Table 2.

Table 2 - Summary of some definitions of sustainability and sustainable development

Author/Organisation	Concepts
Goldsmith (1972)	A society can be considered sustainable when all its purposes and intentions can be met indefinitely, providing optimum satisfaction for all its members.
Allen (1980)	Development means achieving constant satisfaction of human needs and improving the quality of human life.
<i>International Union for the Conservation of Nature and Natural Resources – IUCN</i> (1980)	The document entitled World's Conservation Strategy states that for development to be sustainable, aspects relating to the social and ecological dimensions must be considered, as well as economic factors, living and non-living resources and the short- and long-term advantages of alternative actions. The focus of the concept is environmental integrity.
Barbier (1987)	The concept of sustainable economic development when applied to the Third World is directly concerned with improving the standard of living of the poor in terms of increased food, real incomes, educational and health services, sanitation and water supply, etc. In general, the aim is to reduce the world's absolute poverty and minimise resource depletion, environmental degradation and social instability.
<i>Brundtland, WCED</i> (1987)	There are several dimensions to sustainability. Firstly, it requires the elimination of poverty and deprivation. Secondly, it requires the conservation and enhancement of the resource base, which alone can ensure that the elimination of poverty is permanent. Thirdly, it requires a broader concept of development that encompasses not only economic growth, but also social and cultural development. Fourthly and most importantly, it requires the unification of economics and ecology at decision-making levels.
Goodland e Ledoc (1987)	Sustainable development is defined as a pattern of structural and social economic transformations that optimise the social and economic benefits available in the present without devastating the potential for similar benefits in the future.
Pearce (1987)	The criterion of sustainability requires that the conditions necessary for equal access to the resource base are achieved by each generation.
Markandya & Pearce (1988)	The basic idea of sustainable development is simple in the context of natural (excluding non-renewable) and environmental resources: the use of these inputs in the development process must be sustainable over time..., if we apply the idea to resources, sustainability must mean that a given stock of resources (trees, soil quality, water, etc.) cannot decline. Sustainability must be defined in terms of the need for the use of resources today not to reduce profitability in the future.
Pearce, Barbier & Markandya (1988)	Sustainable development must include desirable social objectives, such as: increases in real per capita incomes, improved nutritional status and health, improved education, access to resources, fairer income distribution and increased basic freedoms.
Lyman & Herdt (1989)	Sustainability is the system's ability to maintain production at a level approximately equal to or greater than the historical average, with an approximation determined by the level of historical variability.

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Barbier (1989)	Sustainable economic development is understood from two perspectives. The first is a highly normative view of the concept as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. In contrast, the second conception requires maximising the net benefits of economic development while maintaining the services and quality of natural resources.
United Nations - Agenda 21 (1989)	A document that establishes guidelines for solving social and environmental problems.
Rattner (1991)	Incorporating the environmental dimension into economic growth strategies and projects is not a sufficient condition either for sustainable development or for improving the living conditions of the poor and deprived.
Costanza (1991)	The concept of sustainable development must be embedded in the dynamic relationship between the human economic system and a larger system with a slower rate of change. To be sustainable, this relationship must ensure that human life can continue indefinitely, with growth and development of its culture, while observing that the effects of human activities remain within appropriate boundaries, so as not to destroy the diversity, complexity and functions of the ecological system that supports life.
Pronk & Ul Haq (1992)	They emphasise the role of economic growth in sustainability. Development is sustainable when economic growth brings justice and opportunity to all human beings on the planet, without privileging certain species, without destroying finite natural resources and without exceeding the system's carrying capacity.
Fresco & Kroonenberg (1992)	The sustainability of natural ecosystems can be defined as the dynamic balance between production and human life, modified by external events such as climate change and natural disasters.
Word Bank (1995)	Sustainability is the stock of capital that we leave for future generations, defined to include all types of capital, it must be equal to or greater than what we find.
Munasingle & McNeely (1995)	They summarise sustainability as the achievement of a group of indicators that refer to well-being and that can be maintained or grow over time.
Merico (1996)	Sustainable development fundamentally means discussing the permanence or durability of the operating structure of the entire production process on which contemporary human society is based.
Hardi & Zdan (1997)	Sustainability is linked to the persistence of certain necessary and desirable characteristics of people, their communities and organisations, and the ecosystems that surround them, over a long and indefinite period of time. To achieve progress towards sustainability, human well-being must be achieved, not just that of ecosystems, and progress in each of these spheres must not be achieved at the expense of the other, but rather the interdependence between the two systems must be strengthened.
Rutherford (1997)	The biggest challenge for sustainable development is to make its analysis compatible. The challenge of building so-called sustainable development, together with indicators that show this trend, is to make the micro and macro levels compatible. At the macro level, we need to understand the situation of the whole and its direction in a more general way and provide the micro level, where decisions are made, with important information for the necessary course corrections.
Bossel (1998)	Sustainable development involves the question of time. The sustainability of a system can only be seen from the perspective of the future, of threats and opportunities.
Steve Goldfinger (1999)	Sustainability is about turning resources into rubbish more slowly than nature can turn rubbish into resources.
National Research Council (1999)	Sustainable development is the latest concept to link collective aspirations for peace, freedom, improved living conditions and a healthy environment. Its merit lies in its attempt

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	to reconcile the real conflicts between the economy and the environment and between the present and the future.
Wackenagel (2000)	Sustainability is about balancing the basic conflict between the two competing goals of ensuring quality of life and living within the limits of nature.
Haque (2000)	An authentic model of sustainable development must present a development perspective beyond economic growth, recognise multiple cultural traditions and beliefs, transcend consumerism and provide a more desirable lifestyle structure, emphasise structural reforms to guarantee internal and global equity and outline effective legal and institutional plans for environmental maintenance.
Jara (2001)	Sustainability is a new paradigm for orientating processes and re-evaluating the relationship between the economy and society and nature, as well as the relationship between the state and civil society.
Schwartzman (2001)	Sustainable development is an ideology, a value, an ethic.
Oliveira Filho (2004)	The authors consider environmental management and sustainable development to be synonymous with business sustainability.
ESG (2004)	At the hands of the UN, this concept of ESG emerged in the financial market to measure the impact that certain sustainability actions have on companies' results.
Schweigert (2007)	The interpretation of sustainability is linked to desired social effects, to the practical functions that the discourse aims to make an objective reality. Sustainability is seen as something good, desirable and consensual. Sustainability can also be seen as a new order of economic efficiency that benefits all citizens, rather than benefiting the few to the detriment of the many.
Tomazzoni (2007)	Sustainability means economic development. Development would be synonymous with social sustainability, which depends on co-ordinated co-operation actions to reverse the concentration of income in certain regions.
Miashiro (2007)	Social responsibility is one of the conditions for guaranteeing the sustainability of institutions. The concepts of business management and social responsibility are integrated insofar as the company seeks to establish sustainable standards of conduct with its stakeholders.
Encarnação, 2007	Sustainability fosters a vision of development aimed at reductionism. Sustainable development represents a guarantee of survival for man and nature.
Junqueira, Adorno-Silva, Rodrigues, Barbieri (2008)	Sustainability extends beyond social responsibility, which determines actions that a company takes only in relation to the context in which it operates, but both terms are related to the company's ethics. Institutions are no longer using the term social responsibility simply as an attitude towards society.
Cabestré; Graziade Polesel & Filho (2008)	Social and environmental responsibility actions must take into account the assumptions of the sustainability paradigm. Social responsibility is characterised by attitudes and activities based on ethical and moral values to minimise the negative impacts that organisations have on the environment.
Claro, Claro & Amâncio (2008)	They consider that companies have found it difficult to associate management discourses and practices with the interpretation of sustainability. For the authors, sustainability and sustainable development are equivalent and focus on the interests of future generations.
Cabestré; Graziade; Polesel & Filho (2008)	Sustainability would be the relationship between economic systems and ecological systems in which human life would continue indefinitely and the effects of human activities would remain within limits without destroying the diversity, complexity and functions of the ecological life-support system.
Giacometi (2008)	Sustainability is an objective that must permeate the actions of contemporary societies, reducing the senseless use of renewable and non-renewable resources.
Rodrigues (2009)	Sustainability means survival, the perpetuity of human endeavours and the planet.
Freitas, Resende & Santos (2012)	Sustainable development can be defined as a vector over time of desirable social objectives, such as: an increase in per capita income, improvements in health status,

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	acceptable educational levels, access to resources, a more equitable distribution of income and the guarantee of greater fundamental freedoms.
United Nations - Agenda 2030 (2015)	Following on from the 2021 Agenda, this is an agreement that defines 17 Sustainable Development Goals (SDGs) that must be met by the end of 2030.
Rio+20 final declaration (2020)	The final declaration of the United Nations Conference on Sustainable Development (Rio+20) presents good intentions and the launch of the Sustainable Development Goals.
Green Bond Principles (2021)	The Green Bond Principles ("GBP"), together with the Social Bond Principles ("SBP"), the Sustainability Bond Guidelines ("SBG") and the Sustainability-Linked Bond Principles ("SLBP") are published under the Green Bond Principles rule (https://www.icmagroup.org/assets/documents/Sustainable-finance/Translations/Portuguese-GBP-2021_06.pdf).

Source: adapted from Bacha, Santos & Schaun, 2010, pp. 6 and Krama et al., 2009, pp. 32-36.

Despite the overwhelming majority of literature showing the positive aspect of sustainable development and sustainability, there are authors who oppose the concepts. Leff (2011) in his studies argues that both notions are delusional and cause uncontrollable inertia in growth. They appear under an economic irrationality that leads to the death of productive centres and the degradation of the economic and financial system, in other words, they challenge the precipice to a catastrophe in an attempt to change the world (Leff, 2011). Despite all the obstacles, these two concepts constitute a matrix capable of transforming today's world (Aquino & Garcia, 2017). Although they can be advocated as empty concepts in their utopian nature, they guarantee complicity between everyone (Aquino & Garcia, 2017).

Between the pros and cons of understanding sustainable development and sustainability, we can see that the latter is generally related to the environmental dimension, to the detriment of the other dimensions that make it up (Freitas & Marques, 2017), although we can admit that this is a multidisciplinary issue (Guimarães, 2017). In this context, the importance of human beings being able, in the 21st century, to adapt to multiculturalism, respect for their neighbours, welcoming refugees and calling for peace to guarantee collective well-being cannot be forgotten (Aquino & Garcia, 2017). In this context, it is essential for companies to ensure that the impacts of their activities and products on the planet and everything that lives on it minimise negative impacts and leverage positive ones, regardless of whether the path involves developing technologies to improve production performance or alternative processes for natural resources (Kuzma, Doliveira & Silva, 2017), safeguarding the sustainable development of the economy and the planet.

Based on a philosophy of moral values, Bolis et al. (2014) argue that sustainable development should benefit from a collective rather than individual decision. Companies should align this thinking with strategic objectives that enable a business model geared towards sustainability (Bocken et al., 2014; Boons & Lüdeke-Freund, 2013). This thinking can be carried out voluntarily or under the duress of legislation, given that companies currently face high pressure from their stakeholders, particularly the national state (Dalhammar, 2016). It is not new that the influence of the law, consumers or suppliers has become an imperative for companies to adopt sustainable practices. If we look specifically at environmental sustainability, we can see that it has dominated business strategy, marketing and innovation (Dangelico & Pujari, 2010; Dangelico et al., 2013). Particularly because of the advantages it can give to brands, increase market share, boost the reputation and image of companies, experience in the field of innovation, legal adaptability or anticipation, entry into foreign markets, etc (Dangelico, 2015).

METHODOLOGY

Study instrument and data collection procedures:

This research is based on two strands of analysis: qualitative and quantitative. The qualitative analysis will use the observation method to find a theoretical explanation of a specific reality. To this end, the reports and accounts were consulted in the first instance and the websites of the companies in the sample in the second. On the quantitative side, a questionnaire was used to understand the phenomenon of sustainability in listed companies. For these companies, there is mandatory standardisation for the use and reporting of sustainability. The Corporate Sustainability Reporting Directive was officially adopted by the European Union on 28 November 2022, replacing the previous Non-Financial Reporting Directive transferred to Portuguese law by Decree-Law 89/2017. The new directive, together with the Sustainable Finance Disclosure Regulation (SFDR) and the Taxonomy Regulation (Regulation 2020/852), establish the pillars for sustainability reporting in the European Union.

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The questionnaire used for data collection was based on the literature review in order to create the three dimensions of sustainability: social, environmental and economic according to John Elkington's model. The questionnaire was tested and adjusted to meet the research objectives. Finally, it was subjected to statistical validity to ensure its academic relevance. The questionnaire was submitted by email and using the google forms platform allowed results to be obtained between 03/04/2024 and 31/03/2024.

Sample

This is a non-probabilistic sample whose selection consists only of Portuguese companies with listed shares and which are indexed to the PSI on 3/04/2024. There are 17 companies included in the NYSE Euronext Lisbon Stock Exchange index, distributed across different sectors of activity, according to the CAE Code of Economic Activities revision 3.0 (table 3). Once the questionnaire data had been collected, it was processed using SPSS Statistical Package for the Social Sciences (SPSS) version 24. The data from the first stage of the research was then analysed and listed as shown in table 4.

Table 3 - sample by CAE - economic activity code

CAE revision 3.0	Companies
Pulp and paper	Altri, SGPS Semapa The Navigator Company
Communications	CTT Correios de Portugal NOS, SGPS
Energy	EDP EDP Renováveis Galp Energia-NOM Greenvolt Ren
Retail/goods and services	Jerónimo Martins, SGPS Sonae Corticeira Amorim IBERSOL, SGPS
Construction and public works	Mota Engil
Banking/financial services	Banco Comercial Português Sonae Capital
Travel and leisure	Ibersol, SGPS

Source: own elaboration.

Objectives:

The choice of this sample is due to the fact that these are national entities whose level of information is higher and more detailed, compared to micro, small and medium-sized companies. Based on this sample, the aim is to answer the objectives of the proposed study, i.e. the following questions:

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- Is sustainability information produced?
- What formats or vehicles for communicating sustainable information are used by the companies surveyed?
- Does the company's strategy incorporate sustainability?
- Do you consider sustainability information important?
- Do you take into account the social and environmental impacts caused by your business activities?

In order to achieve these study objectives, the reports and accounts were analysed, consulted using the website of the Portuguese Securities Market Commission (CMVM) and the websites of the 17 companies through the online page that each of them has (table 4). The questionnaire sent by e-mail in April 2024 was received by the same means in the same month by all the companies consulted. In this way, it was possible to see two things: firstly, whether the companies disclose sustainability information in their annual reports and on their websites, and whether or not they practise it. Through the questionnaire, it is possible to gauge each company's personal understanding of sustainability and whether this coincides with what they disclose or practise in the context of the topic under study.

Table 4 - types of information disclosed by companies

Companies	Annual Report		Website	
	Information Quantitative	Information Qualitative	Information Quantitative	Information Qualitative
Altri, SGPS	X	X	X	
Banco Comercial Português	X	X		X
Corticeira Amorim	X	X		X
CTT Correios de Portugal	X	X		X
EDP	X	X	X	X
EDP Renováveis	X	X	X	X
Galp Energia-NOM	X	X	X	X
Greenvolt	X	X	X	X
Ibersol, SGPS	X	X		X
Jerónimo Martins, SGPS	X	X		X
Mota Engil	X	X		X
NOS, SGPS	X	X	X	X
Ren	X	X		X
Semapa	X	X		X
Sonae	X	X	X	X
Sonae Capital	X	X		X
The Navigator Company	X	X		X

Source: own elaboration.

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RESULTS

Companies produce sustainability information that is distributed both in the elements of the annual report (financial statements, annexes and supplementary elements) and on websites. In the latter case, the information is very dispersed, without a common denominator because each company reports differently, even though it is quantitative and qualitative information depending on the case. However, it is worth noting that the reports and accounts mention qualitative and quantitative information, but it is not comparable in terms of quantity because each company produces it according to its type of activity. As for the websites, even less is purchasable and the qualitative information is predominant. This is essentially centred on the environmental sphere, as opposed to the social and economic spheres.

The majority of the companies in this sample are private (72%), with just over a quarter being public (28%) (Table 5). The sample is made up entirely of listed companies and, according to their size, large companies (table 5). Large companies are those that employ more than 250 workers, have a turnover of more than 50 million euros a year and have a balance sheet total of more than 43 million euros (IAPMEI, 2019).

Table 5 - general characteristics of the companies

Nature of companies	Absolute frequency	%	Sector of activity	Absolute frequency	%
Public	5	29%	Primary	2	12%
Private	12	71%	Secondary	2	12%
Other	0	0%	Third sector	13	76%
<i>Total</i>	<i>17</i>	<i>100%</i>	<i>Total</i>	<i>17</i>	<i>100%</i>
Company size	Absolute frequency	%	Listed / unlisted	Absolute frequency	%
Small	0	0%	Quoted	17	100%
Medium	0	0%	Not quoted	0	0%
Large	17	100%	Don't know/No answer	0	0%
<i>Total</i>	<i>17</i>	<i>100%</i>	<i>Total</i>	<i>17</i>	<i>100%</i>

Source: own elaboration.

When the companies' perception of sustainability was analysed, it was clear that they produce more sustainability information internally than externally (table 6). In other words, sustainability seems to be an important aspect for these companies as 100% report it internally, only around ¼ don't divulge it externally, as 76% provide information on sustainability more outside the company than inside (table 6). The means of communication used for this purpose is preferably another type of format (100%) apart from the sustainability report, which is only used in 61% of cases (table 6). Whether it's because of the structured format that this report normally follows, it is clear that companies opt for other means of communicating sustainability information (table 6). This was proven by looking at the companies' websites, which present information on sustainability and social responsibility policies in a very diverse way, sometimes duplicated and most of the time as a way of publicising a distinctive image and leveraging competitive advantages over their main competitors.

When looking at the medium- and long-term strategy, 94% of the companies answered that sustainability is included in this, and this level of response corroborates the importance that companies seem to have in terms of producing information and publicising it (table 6). Considering the importance that sustainability seems to have for this sample of companies, it's not surprising that the respondents take into account the social and environmental impacts that their business activity has on their environment (100%) (chart 6). Therefore, based on the last answer to the questionnaire, companies consider information on sustainability to be important for stakeholders in 94% of cases. We can infer that the 6% of companies that don't seem to consider this information important for their stakeholders are companies that don't produce sustainability information externally and whose strategy doesn't take into account the use of sustainability.

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Table 6 - companies' perception of sustainability

Do you produce internal information on sustainability?	Absolute frequency	%	Do you produce external information on sustainability?	Absolute frequency	%
Yes	17	100%	Yes	13	76%
No	0	0%	No	4	24%
Don't know/No answer	0	0%	Don't know/No answer	0	0%
<i>Total</i>	<i>17</i>	<i>100%</i>	<i>Total</i>	<i>17</i>	<i>100%</i>
Do you use the sustainability report to communicate sustainability?	Absolute frequency	%	Do you use another format to communicate sustainability?	Absolute frequency	%
Yes	11	65%	Yes	17	100%
No	6	35%	No	0	0%
Don't know/No answer	0	0%	Don't know/No answer	0	0%
<i>Total</i>	<i>17</i>	<i>100%</i>	<i>Total</i>	<i>17</i>	<i>100%</i>
Do you have a medium and long-term strategy that includes sustainability?	Absolute frequency	%	Does it take into account the social and environmental impacts caused?	Absolute frequency	%
Yes	16	94%	Yes	17	100%
No	1	6%	No	0	0%
Don't know/No answer	0	0%	Don't know/No answer	0	0%
<i>Total</i>	<i>17</i>	<i>100%</i>	<i>Total</i>	<i>17</i>	<i>100%</i>
Do you consider information on sustainability to be important for stakeholders?					%
Yes				16	94%
No				1	6%
Don't know/No answer				0	0%
<i>Total</i>				<i>17</i>	<i>100%</i>

Source: own elaboration.

Having analysed the results obtained by looking at the companies' reports and accounts, consulting the information on their websites and listening to the companies in the questionnaires sent to them, it is possible to see some limitations in this study. Among the main ones, we can highlight the fact that the sample was small, centred only on companies listed on the stock exchange and was carried out only in Portugal. If the respondents and study instruments had been different, we could have reached different conclusions to those contained in this study. It would therefore be interesting in other studies to see how listed companies in other countries behave in this area, to discern differences between listed and unlisted companies, and to assess differences between different sectors of activity, among other aspects.

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CONCLUSIONS

The concepts of sustainability and sustainable development are complementary and aim to improve human life on the planet. Their temporal and conceptual evolution has made it possible today to verify their importance for future generations. The economic growth of the last century has led to the need to look at resources according to their nature, renewable and non-renewable, in order to avoid negatively affecting future generations.

The growth of training courses, regulatory standards, measurement models and social and environmental programmes has sparked a new wave of companies, some of which are fighting for sustainability, sustainable development and the practice of social responsibility. Together, these three aspects guarantee companies' social, economic, political, environmental, technological and geographical commitment to consumers and other stakeholders.

Stakeholders give companies more consumption, more investment, more visibility, higher stock market prices and other favourable impacts on corporate governance.

When companies don't appear to be sustainable, don't allow for sustainable development or neglect to practice social responsibility, stakeholders respond with brand boycotts and other actions that damage their image and product sales. The literature review revealed that companies with little concern for their social impact harm their social performance, as well as their economic and financial performance. The opposite is also true: generally speaking, the big brands with the most social actions are the ones that show the best social performance. This social performance, whether positive or negative, is reflected in the company's accounts and has a link to the consumer, because it is the consumer, through their relationship with the brand, who sees this performance. In addition to this aspect, which allows for a message and exchange of experience with other consumers, there is a wide range of forms of information on social performance. The various forms include product labels, leaflets, billboards, sponsorships, events, activity reports, web pages, among others, which can culminate, in certain circumstances, in processes to camouflage certain business results obtained.

The study sample shows that large, listed companies produce both qualitative and quantitative sustainability information. To a greater extent, qualitative information appears both in reports and accounts and on websites. However, there is a lack of a common model, particularly on the websites, to compare the actions undertaken and to have a common basis of measurement to make it easier to see the scale of the effort made by each company in sustainability actions. It can be seen that most of the information produced is based on environmental aspects, as well as actions that are more environmental than social.

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