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Corporate Social Responsibility (CSR), Sustainability and ESG Standards Used by ATHEX ESG Index Listed Companies

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Abstract: Corporate social responsibility (CSR) and sustainability have proliferated the corporate boardroom agenda and companies' leadership teams are trying to find ways to improve their social and environmental performance and enhance their corporate governance management systems. This paper investigates the main CSR and sustainability-related standards that modern corporations use. To do so, it uses a sample of the 60 companies listed in the ATHEX ESG index. Firstly, a content analysis of those companies' sustainability reports is conducted. The 60 companies are categorized into sectors according to the Global Industry Classification Standard (GICS). The sustainability standards used by each sector are grouped into four categories, namely environmental, social, governance, and reporting. Furthermore, an attempt is made to establish a link between the standards used and both the sectors they belong to and the material topics of each sector as they emerge from each company's materiality analysis. Our research shows that our sample companies predominantly utilize reporting standards regardless of their sector. We did not establish a definitive relation between the prioritized material topics and the relative standards employed by the companies. We may have recognized certain pairings such as environmental material topics with relative environmental management systems, but not in a rigid manner or across all material topic categories.

Keywords: CSR standards; sustainability standards; ESG standards; ATHEX ESG index; sustainability reporting; materiality; GICS



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1. Introduction

With the expansion of globalization, companies progressively adopted management standards established by the International Organization for Standardization (ISO) as a response to customer expectations [1]. In general, the main incentive for standards implementation is increased demand for sustainably produced goods and services through global value chains and export markets, new domestic markets, and public procurement [2]. It is notable that different management systems have different incentives. Foreign customers and local communities are significant drivers for ISO 9001 certification, while foreign investors, being publicly listed, and local communities are drivers for ISO 14001 certification; at the same time, only listed companies are drivers for OHSAS 18001 [3].

There is a proliferation of rival and uncoordinated voluntary sustainability standards developed mainly by NGOs and private companies, which expedite serving as catalysts enabling the implementation of sustainability policies [4]. These standards often compete against each other for market shares and legitimacy despite the fact that they coevolve and appear to promote each other. Using the coffee industry, a study highlights the spread of

voluntary sustainability standards and recognizes a tension between the shared objective of promoting sustainability and the competition among standards organizations [5].

CSR standards assess a company's sustainability and its internal management's efficacy and ethical principles [6]. A hotel industry study stated that hotels require internal motivators to assimilate a quality system, as external factors alone do not adequately elucidate the process of quality internalization [7]. A study highlighted the need for evolving ESG reporting standards that have to include, at a bare minimum, the following: validation procedures for the reported KPIs, data timeliness, management of intangible assets, and standard procedures for qualitative data and descriptive information [8].

The development of ESG reporting standards improves transparency, accountability, trust, and innovation, hence facilitating informed decision-making for investors. At the same time, the organizations that adopt these reporting standards aim to promote sustainability efforts and enhance trust among stakeholders [9]. The more socially and environmentally conscious all stakeholders become, the more compliance with robust ESG standards may provide a competitive advantage, improving a company's reputation and strengthening its market position [10]. The implementation of robust ESG standards can enhance the ESG performance of organizations [11].

When organizations adopt voluntary management systems, namely those published by the International Organization for Standardization (ISO), they can address several potential issues related to sustainable development [12]. The ISO itself published a relative edition where it pairs ISO standards with the United Nations Sustainable Development Goals [13]. Fonseca and Carvalho [14] discovered that the communication of United Nations Sustainable Development Goals (SDGs) is more pronounced in Portuguese firms accredited in quality, environment, and occupational health and safety that publish their sustainability reports (GRI) on their websites. A study highlighted an interlinkage between ISO standards and the United Nations Sustainable Development Goal 2: zero hunger—end hunger, achieve food security and improved nutrition, and promote sustainable agriculture [15]. ISO standards have the potential to contribute especially to two SDG 2 sub-targets, namely targets 2.3 and 2.4 (ibid).

The proliferation of standards and the differentiation of key performance indicators (KPIs) created a vague benchmarking environment where comparison among companies' sustainable performance was difficult to achieve. Although some frameworks were successfully developed [16], the direct comparison even between two companies of the same size and sector using the same sustainability reporting standards is not a straightforward task. ESG indicators lack universally standardized criteria, and rating agencies globally employ diverse frameworks and metrics to assess the ESG performance of corporations [17].

The fact that companies adopt management standards does not necessarily guarantee a change in culture and/or corporate behavior. The internalization of quality management standards entails embedding these standards into everyday business practices and always pursuing enhancement. This process is evaluated by constructs such as everyday practices and continuous improvement [18]. Management tools such as ISO standards can contribute to possible sustainable development induction in organizations when they are strategically aligned with the overall organization's strategy [19].

Recognizing and isolating CSR and sustainability-related standards is not a forthright, simple task, as CSR has a holistic, strategic character and crosses the whole of an organization vertically and horizontally. Glavic and Lukman [20] gathered and analyzed 51 sustainability-related terms and their definitions and tried to establish their interconnection between terms based on semantic similarities and differences. Detecting a research gap in a comprehensive presentation of how CSR and sustainability standards are handled, we used the case of 60 listed companies in the ATHEX ESG index in Greece. Similarly, when

Calvin and Street [21] wanted to assess the contribution of companies toward the United Nation's 2030 Agenda for Sustainable Development, they chose to base their research on the companies listed in the US Dow 30. Our study analyzes the content of the sustainability, ESG, and corporate social responsibility reports of the ATHEX ESG index companies, focusing on their management and reporting standards. First, an identification of the standards used in the reports is performed. Then, those management standards are manually categorized into four categories: environment, social, governance, and reporting. The standards used by each company are analyzed in relation to the prioritized sustainability material topics for each respective company.

The ATHEX ESG index is a sustainability index established by the Athens Stock Exchange (ATHEX) to advance the concepts of ESG (environmental, social, governance) within Greek corporations. It was inaugurated in August 2021, originally comprised 35 firms, chosen for their environmental, social, and governance (ESG) performance, and reached its goal of 60 companies as of June 2023. The index comprises companies that have published ethical business practices and adhere to rigorous sustainability standards. The index offers an assessment of organizations' dedication to sustainable development by analyzing their environmental, social, and governance performance. Involvement in the index necessitates compliance with principles of transparency and information disclosure, allowing investors to recognize companies that incorporate ESG values into their strategies and operations [22].

This paper provides valuable localized insights into ESG mapping in a specific geographical location, namely Greece, and at the same time offers general insights into the sustainability standards market, possibly suggesting new research fields. It enriches the academic and practical discourse around ESG by providing empirical evidence from a European listed market. Sustainability reporting in the European Union has become more rigorous after the introduction of the Corporate Sustainability Reporting Directive [23], which requires that companies report on sustainability aspects of their operations. Therefore, the case of Greece may act as a model for other markets and allow cross-country research comparisons. The identification and categorization of management standards into environmental, social, governance, and reporting categories enables clear benchmarking. Moreover, the connection between standards used and materiality offers the opportunity for sustainability scholars to enhance sustainability strategies and understand possible gaps in sustainability management approaches. Additionally, the content analysis of the sustainability reports gives a comprehensive understanding of reporting practices in a European listed market and offers valuable insights into the sustainability reporting status quo, such as the fact that all companies surveyed used at least two and often more reporting standards in conjunction with each other. The GRI and UNGC reporting standards were predominately used, often complemented by SASB and ESRS, as aids for their materiality analyses. Companies also tend to overwhelmingly choose ISO management standards to manage ESG-related topics. The proliferation of internationally recognized reporting and management standards indicates that all companies surveyed, regardless of their industrial sector, aim to align with global best practices in sustainability reporting and management. Furthermore, the manual classification of standards in four different categories, namely reporting, environmental, social, and governance, may act as a model that can be benchmarked against other countries and recognizes trends and practices that can inform researchers and policymakers.

2. Materials and Methods

We started our research by conducting a literature review to examine the current state of ESG-related reporting and management standards. The review highlighted the need for

a systematic approach towards the use of standards. We found that the topic presented research opportunities since there are gaps in the existing literature.

Zooming in the case of Greece and the ATHEX ESG index, in November 2024, we found the 60 listed companies that comprise the index and visited their corporate websites to gain access to their sustainability reports. In total, 59 companies had published their sustainability report for the reporting period of 2023, while one decided not to publish a report for 2023, so we relied on the report for 2022. Thus, we created a database of 60 sustainability reports.

To allow for international benchmarking of our analysis, we categorized the companies according to the Global Industry Classification Standard (GICS), a well-established taxonomy, employed to categorize and arrange organizations into industrial groupings and sectors according to their principal business activity. Therefore, companies within the same GICS sector, namely companies with similar products, technologies, or services, were grouped and analyzed together. We relied solely on the companies' primary business activity and did not take into account the secondary and tertiary business activities. GICS offers a uniform framework for the global comparison of enterprises and industries. The secondary and tertiary business activities were not taken into account during this categorization.

The use of GICS guarantees that enterprises are methodically categorized, facilitating analysis and comparison for investors, analysts, and scholars internationally [24].

The reports were analyzed based on the following research questions:

- What are the main management and reporting standards used by the 60 companies in the ATHEX ESG index?
- Is there a clear preference for ESG-related management standards in each GICS sector?
- Is there a relationship between the sustainability-related material topics mentioned in the reports and the ESG-related management standards the 60 companies of the ATHEX ESG index use in their operations?
- Can the management standards presented in sustainability reports of the 60 companies of the ATHEX ESG index fall under the umbrella of ESG?

To achieve such an analysis, each sustainability report was thoroughly reviewed and data were extracted and organized in a database using the spreadsheet software of Microsoft Excel. The database included information extracted from each report organized in the following columns: company name, GICS company sector, standards used in the report, other certifications, management systems, year of publication, reporting standards, and prioritized material topics. Each line presented data for the relative company.

We then classified the standards used by the companies of each sector into four categories: environment, social, governance, and reporting standards, in order to assess if each report only used reporting standards or ESG-related management standards. The sustainability reports themselves were helpful in categorizing the standards into ESG categories since different management standards were presented in different sections of the report, i.e., environmental management standards were mentioned in the environment section of the report. To ensure accuracy about the category, each management standard belonged to we reviewed the contents of each standard on the issuing organization's website. We also extracted data on the sustainability-related material topics each company published in their report based on their materiality assessment, creating a separate spreadsheet database. In this database, we included the material ESG topics for each company and grouped the companies and topics per sector. We arranged material topics that belonged in the same category together, based on name, description, or content. For example, we grouped the topics of "climate change adaption" and "climate change action" under the same umbrella term: climate change. Then, we investigated whether the sector and/or the material topics influence the management standards that each company uses.

3. Results

3.1. Literature Review

EU legislation as well as consumer and value chain pressure have led to an increase in sustainability reporting in the EU. Gawęda's [25] work, which evaluated the evolution of sustainability reporting of European listed companies in the first twenty years of the twenty-first century, observes the Non-Financial Reporting Directive (NFRD) of 2014 [26] and encourages reporting to assess the ESG performance of companies. However, even though this work mentions that reporting standards are used for sustainability reporting, and it further assesses the ESG performance of the companies based on their ESG ratings, it does not provide an analysis of the reporting and ESG-related standards used in these reports. Standards reporting on ESG performance are expected to measure, communicate, and evaluate companies, but their requirements might vary significantly [27]. Moving from the NFRD to the Corporate Sustainability Reporting Directive (CSRD), which was accompanied by its own sustainability reporting standards, namely the European Sustainability Reporting Standards (ESRSs), brought the conversation about streamlining sustainability reporting standards once again to the forefront [28].

Reporting standards have been discussed on the basis of methodology for data collection, aggregation, and validation, of materiality to identify the ESG factors that drive financial risk and opportunity as well as impact metrics [8].

However, there is a research gap when it comes to categorizing management standards into sustainability-related categories, namely into ESG-related categories. One study [29] of 5939 CSR reports published by European and U.S. companies over the 2008–2019 period used textual analysis that focused on the thematic areas of 'human resources', 'environmental protection', and 'society at large'. These areas cover aspects of the E and S of ESG but focus on the topics the companies choose to present within the purview of these areas rather than connecting the standards these companies with ESG or trying to find a relation between the material topics mentioned in the reports and the management standards adopted by these companies. A recent, robust bibliometric analysis in major academic databases could not identify any ESG-related studies with a sole focus on management systems standards [30]. The study concluded among others that research on management standards focuses on a few particular standards such as ISO 9001 and ISO 14001, but other management standards could have greater potential to enhance the ESG performance of firms. Only a few studies focused on management systems and their relation to the ESG concept, and they are mostly empirical works focusing on performance (ibid).

An empirical study on 4292 companies from Europe, East Asia, and North America highlighted that quality management systems and environmental management systems enhance ESG performance, and companies with such systems score significantly higher ESG scores [31]. Another study suggested that organizations should adopt management standards in order to boost their sustainability [32]. Controlling and effectively managing standards such as ISO 9001, ISO 14001, OHSAS 18001, and other standards and certifications is a key condition to achieving higher levels of sustainable development [33].

3.2. Sustainability Report Analysis

Sixty (60) companies that are included in the ATHEX ESG index were surveyed and each was categorized into one of the eleven GICS sectors based on the core business activity that they engage in (Table 1).

Table 1. Companies surveyed categorized into the GICS sectors.

GICS Sector	Number of Companies
Energy	3
Materials	12
Industrials	8
Consumer Discretionary	9
Consumer Staples	5
Healthcare	2
Financials	9
Information Technology	2
Communication Services	1
Utilities	5
Real Estate	4

Overall, three companies (HELLENiQ ENERGY and Motor Oil, DEI) belong to the energy sector, twelve companies (FLEXOPACK, METLEN, TITAN CEMENT INTERNATIONAL, VIOHALCO, AKRITAS, Alumil, Elastron, EIVAHALCOR, IKTINOS HELLAS, THRACE PLASTICS Co S.A., Plastika Kritis, SIDMA S.A.) belong to the materials sector, mostly in the metals, construction materials and packaging industries, eight companies (CENERGY HOLDINGS, INTRAKAT, AVAX, AEGEAN, ELLAKTOR, Eltongroup, ThPA S.A., P.P.A. S.A.) belong to the industrial sector, mostly in the construction and engineering and transportation industries, nine companies (Autohellas, FOURLIS, JUMBO, QUEST, Elinoil, Motodynamics, OPAP, Petropoulos, REVOIL) belong to the consumer discretionary sector, five companies (COCA-COLA HBC AG, LOULIS FOOD INGREDIENTS, Gr. Sarantis S.A., Kri, Papoutsanis) belong to the consumer staples sector, mostly in the beverages, food products and personal care products industries, two companies (LAVIPHARM, Athens Medical Group) belong to the healthcare sector, nine companies (ALPHA TRUST HOLDINGS, ALPHA TRUST ANROMEDA, Alpha Services and Holdings, EUROBANK ERGASIAS, IDEAL HOLDINGS, National Bank of Greece, Athens Exchange Group, Interlife, PIRAEUS FINANCIAL HOLDINGS) belong to the financial sector, two companies (SPACE HELLAS, Intracom) belong to the information technology sector, one company (OTE) belongs to the communication services sector, five companies (ADMIE Holding, GEK TERNA, EYDAP, EYATH S.A.) belong to the utilities sector, and four companies (BRIQ PROPERTIES, DIMAND, LAMDA DEVELOPMENT, Premia Properties REIC) belong to the real estate sector based on their key business activities.

3.3. ESG Standards Used per Sector

This section presents data and analysis of the management and reporting standards used by every sector of the ATHEX ESG index divided into four categories, namely environment, social, governance, and reporting.

Table 2 presents the environmental, social, and governance standards, while Table 3 presents the reporting standards used in the energy sector.

The energy sector favors reporting standards with every company using GRI, UNGC, ATHEX ESG index, Greek Sustainability Code, and AA1000AP. The environmental management standards are only three revolving around environmental management (ISO 14001), energy management (ISO 50001) and, GHG (greenhouse gases) management (ISO 14064). In the social sphere, only one standard is used by the companies in the energy sector,

namely an employees' health and safety management standard (ISO 45001). However; the energy sector employs 12 rather varied governance-related management standards.

Table 2. Environmental standards used in the energy sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
ISO 14001	3/3	ISO 45001	3/3	ISO 9001	3/3
ISO 50001	3/3			ISO 17025	2/3
ISO 14064	2/3			ISO 31000	1/3
				ISO 31010	1/3
				ISO 27001	2/3
				ISO 37001	1/3
				ISO 22301	2/3
				ISO 17020	1/3
				ISO 21001	1/3
				ISO 29993	1/3
				ISO 39001	1/3
				ISO 18788	1/3

Table 3. Reporting standards used in the energy sector.

Standard	Number of Companies That Use It
SASB	2/3
CDSB	1/3
TCFD	2/3
SBTi	1/3
GRI	3/3
UNGC	3/3
ATHEX ESG Index	3/3
Greek Sustainability Code	3/3
AA1000AP	3/3
ESRS	2/3

Table 4 presents the management standards used in the materials sector categorized by environmental, social, and governance standards, while Table 5 presents the reporting standards.

The materials sector favors reporting standards. The overwhelming majority of companies (11/12) utilize the GRI standards and a significant majority (9/12) use UNGC and ATHEX ESG index, whereas a significant minority (5/12) use SASB. GRI is the only standard that is sometimes used on its own, whereas all others are used in conjunction with each other.

This sector also favors various management standards, with an overwhelming preference for ISO management standards.

Table 4. Environmental, social, and governance standards used in the materials sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
EN 16258	1/12	EN 312	1/12	IATF 16949:2016	2/12
ISO 14001	8/12	EN 14322	1/12	ISO 9001	12/12
ISO 50001	8/12	EN 14323	1/12	ISO 27001	4/12
ISO 14040	1/12	EN 438-1	1/12	ISO 27701	1/12
ISO 14044	1/12	American standard NFPA 285	1/12	ISO 39001	2/12
ISO 14025	1/12	British standard BS 8414	1/12	ISO 17025	3/12
ISO 14064	4/12	ISO 15378	1/12	ISO 37001	1/12
ISO 46001	2/12	ISO 13485	1/12	ISO 31000	1/12
ISO 14021	1/12	ISO 22000	2/12		
		ISO 45001	10/12		
		ISO 26000	2/12		

Table 5. Reporting standards used in the materials sector.

Standard	Number of Companies That Use It
GRI	11/12
UNGC	9/12
ATHEX ESG Index	9/12
Greek Sustainability Code	1/12
AA1000AP	3/12
ESRS	3/12
SASB	5/12
SMETA/SEDEX	1/12
TCFD	2/12
ASI Performance Standard	2/12
ASI Chain of Custody Standard AS9100D	2/12
REACH	1/12
AccountAbility 1000 Stakeholder Engagement Standard	1/12

In the social sphere, this sector favors several product quality standards that benefit the end user such as E312 for the quality of particle boards, EN 14322 for the quality of decorative melamine faced boards for interior use, EN 14323 for the quality of wood-based products, EN 438-1 for the quality of high-pressure decorative laminates, ISO 15378:2017 for the quality of primary packaging materials for medicinal products, and ISO 13485:2016 for the quality management for medical devices.

In regard to the environment, the emphasis is on environmental management (ISO 14001), GHG management (ISO 14064), energy management (ISO 50001), and environmental management through LCA (ISO 14040, ISO 14044, ISO 14025).

Table 6 presents the environmental, social and governance standards, while Table 7 presents the reporting standards used in the industrial sector.

Table 6. Environmental, social and governance standards used in the industrial sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
ISO 14001	7/8	Payment Card Industry Data Security Standard	1/8	IATF 16949:2016	2/12
ISO 50001	6/8	ISO 45001	6/8	ISO 9001	3/8
ISO 14090	1/8	ISO 20000	1/8	ISO 27001	5/8
ISO 14064	4/8	ISO 26000	1/8	ISO 22301	3/8
				ISO 31010	1/8
				ISO 39001	3/8
				ISO 37301	1/8
				ISO 37000	1/8
				ISO 37001	2/8
				ISO 37002	1/8
				ISO 30415	1/8
				ISO 31000	2/8
				ISO 41001	1/8

Table 7. Reporting standards used in the industrial sector.

Standard	Number of Companies That Use It
GRI	5/8
UNGC	6/8
ATHEX ESG Index	6/8
Greek Sustainability Code	1/8
AA1000AP	2/8
ESRS	4/8
SASB	5/8

The industrial sector favors reporting standards, with UNGC and the ATHEX ESG index being the most prevalent. GRI is also widely used with ESRS being mostly used for materiality purposes for the reporting period we performed research; they were not yet obliged by the CSRD.

This sector also favors exclusively ISO management standards, with an emphasis on Governance standards. In the environmental sphere, the emphasis is on environmental management (ISO 14001), with 7/8 companies of this sector adhering to this standard, and energy management, with 6/8 companies using ISO 50001.

Table 8 presents the environmental, social and governance standards, while Table 9 presents the reporting standards used in the consumer discretionary sector.

Table 8. Environmental, social, and governance standards used in the consumer discretionary sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
ISO 14001	4/9	International Responsible Gaming Standards	1/9	ISO 9001	5/9
ISO 50001	2/9	ISO 20000	1/9	ISO 27001	2/9
ISO 14064	4/9	ISO 22000	1/9	ISO 22301	3/9
		ISO 45001	2/9	ISO 37301	1/9
		ISO 26000	1/9	ISO 27701	1/9
				ISO 39001	1/9
				ISO 37001	1/9
				ISO 31000	2/9

Table 9. Reporting standards used in the consumer discretionary sector.

Standard	Number of Companies That Use It
GRI	8/9
UNGC	5/9
ATHEX ESG Index	9/9
AA1000AP	1/9
ESRS	2/9
SASB	3/9
TCFD	1/9
IFRS	1/9

The consumer discretionary sector favors reporting standards, with the ATHEX ESG index being the most prevalent followed by GRI and UNGC.

This sector also favors management standards, mostly ISO standards; however, in this sector, 2/9 companies do not utilize ISO at all. The emphasis of this sector is on governance standards.

Table 10 presents the environmental, social, and governance standards, while Table 11 presents the reporting standards used in the consumer staples sector.

The consumer staples sector emphasizes reporting standards. All companies utilize the GRI standards and a significant majority use the ATHEX ESG index. SASB and ESRS are used mostly for materiality purposes. This sector also utilizes environmental standards that we have noticed are commonly used in other sectors, namely the ISO standards for environmental management, energy management, and GHG management. Social standards are also not very varied in this sector, there being only three: the ISO standard for employee health and safety, and two were related to food quality and safety. Finally, the governance-related management standards are only three as well, with ISO 9001 being used by 4/5 companies in this sector.

Table 12 presents the environmental, social, and governance standards, while Table 13 presents the reporting standards used in the healthcare sector.

Table 10. Environmental, social, and governance standards used in the consumer staples sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
ISO 14001	3/5	IFS	2/5	ISO 9001	4/5
ISO 50001	1/5	ISO 22000	2/5	ISO 27001	2/5
ISO 14064	4/5	ISO 45001	2/5	ISO 22716	1/5

Table 11. Reporting standards used in the consumer staples sector.

Standard	Number of Companies That Use It
GRI	5/5
UNGC	2/5
ATHEX ESG Index	4/5
ESRS	1/5
SASB	1/5
TCFD	1/5

Table 12. Environmental, social, and governance standards used in the healthcare sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
ISO 14001	1/2	EN 15224:2016	1/2	ISO 9001	2/2
ISO 14064	1/2	ISO 13485	1/2	ISO 15189	1/2
		ISO 22000	1/2		

Table 13. Reporting standards used in the healthcare sector.

Standard	Number of Companies That Use It
GRI	2/2
UNGC	2/2
ATHEX ESG Index	1/2
SASB	1/2

The two companies in the healthcare sector apply reporting standards. Both companies use GRI and UNGC standards. This sector also favors various management standards, with an overwhelming preference for ISO management standards.

In the social sphere, product quality standards that benefit the end user such as ISO 13485 for the quality management of medical devices are being used.

Regarding the environment the only standards used are for environmental management (ISO 14001), and GHG management (ISO 14064).

Table 14 presents the environmental, social, and governance standards, while Table 15 presents the reporting standards used in the financial sector.

Table 14. Environmental, social, and governance standards used in the financial sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
GHG Protocol Corporate Accounting and Reporting Standard	1/9	Social Return on Investment (SROI) International Standard	1/9	International Standard on Quality Management (ISQM)	1/9
Global GHG Accounting and Reporting Standard for the Financial Industry	1/9	Payment Card Industry Data Security Standards	1/9	ISO 9001	4/9
ISO 14001	5/9	ISO 20000	2/9	ISO 27001	6/9
ISO 50001	4/9	ISO 45001	3/9	ISO 22301	3/9
ISO 14064	5/9	ISO 10002	1/9	ISO 22316	1/9
ISO 20121	1/9	ISO 26000	1/9	ISO 20022	1/9
				ISO 27017	1/9
				ISO 27018	1/9
				ISO 27701	2/9
				ISO 37001	1/9
				ISO 37002	1/9

Table 15. Reporting standards used in the financial sector.

Standard	Number of Companies That Use It
GRI	9/9
UNGC	6/9
ATHEX ESG Index	6/9
ESRS	1/9
SASB	3/9
TCFD	4/9
AA1000	1/9

The governance and the reporting standards prevail in the financial sector. We identify 10 different governance standards used with one of them mentioned by six out of nine companies, and at the same time, all nine companies report on their ESG performance.

Table 16 presents the environmental, social, and governance standards, while Table 17 presents the reporting standards used in the information technology sector.

In the information technology sector, one company shows a preference for using environmental and governance standards, whereas both companies choose the same social standard, namely the ISO management standard for employee health and safety. Both companies in this sector use the same reporting standards, in conjunction with each other.

Table 18 presents the environmental, social, and governance standards, while Table 19 presents the reporting standards used in the communication services sector.

Table 16. Environmental, social, and governance standards used in the information technology sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
ISO 14001	1/2	ISO 45001	2/2	ISO 9001	1/2
ISO 14064	1/2			ISO 27001	1/2
				ISO 22301	1/2
				ISO 27701	1/2

Table 17. Reporting standards used in the information technology sector.

Standard	Number of Companies That Use It
GRI	2/2
UNGC	2/2
ATHEX ESG Index	2/2
SASB	2/2

Table 18. Environmental, social, and governance standards used in the communication services sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
ISO 14001	1/1	ISO 20000	1/1	ISO 9001	1/1
ISO 50001	1/1	ISO 45001	1/1	ISO 27001	1/1
				ISO 27002	1/1
				ISO 22301	1/1
				ISO 21001	1/1
				ISO 29993	1/1
				ISO 27701	1/1
				ISO 31000	1/1
				ISO 37000	1/1
				ISO 37001	1/1
				ISO 37002	1/1
				ISO 37008	1/1
				ISO 37301	1/1
				ISO 39001	1/1
				ISO 17025	1/1

A single company was included in the ATHEX ESG index in the communication services sector, so no sector benchmarking can be presented.

Table 20 presents the environmental, social, and governance standards, while Table 21 presents the reporting standards used in the utilities sector.

Table 19. Reporting standards used in the communication services sector.

Standard	Number of Companies That Use It
GRI	1/1
ATHEX ESG Index	1/1
TCFD	1/1
SASB	1/1
AA1000	1/1
IFRS	1/1
Greek Sustainability Code	1/1
ESRS	1/1

Table 20. Environmental, social, and governance standards used in the utilities sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
ISO 14001	4/5	ELOT 1439:2013	1/5	ISO 9001	2/5
ISO 50001	3/5	ISO 20000	1/5	ISO 27001	3/5
ISO 14064	5/5	ISO 45001	4/5	ISO 22301	2/5
				ISO 31000	1/5
				ISO 37301	1/5
				ISO 17025	2/5
				ISO/IEC 17024	1/5

Table 21. Reporting standards used in the utilities sector.

Standard	Number of Companies That Use It
GRI	5/5
UNGC	2/5
ATHEX ESG Index	5/5
SASB	5/5
ESRS	2/5
GHG Protocol	1/5

The utilities sector highlights a stronger inclination towards reporting standards, with a clear preference for the GRI, ATHEX ESG index, and SASB standards, all of which are used by all companies in this sector. The most common environmental standard, used by all companies is the ISO for GHG management, 4/5 companies favor the use of the ISO for employee health and safety and a variety of governance-related management standards with the most prevalent being that of information security (ISO 27001).

Table 22 presents the environmental, social, and governance standards, while Table 23 presents the reporting standards used in the real estate sector.

Table 22. Environmental, social, and governance standards used in the real estate sector.

Environmental Standard	Number of Companies That Use It	Social Standard	Number of Companies That Use It	Governance Standard	Number of Companies That Use It
ISO 14001	2/4	ISO 45001	2/4	ISO 9001	1/4
ISO 14064	2/4			ISO 27001	1/4
				ISO 31000	2/4
				ISO 37001	1/4
				ISO 41001	1/4

Table 23. Reporting standards used in the real estate sector.

Standard	Number of Companies That Use It
GRI	4/4
UNGC	3/4
ATHEX ESG Index	4/4
SASB	1/4
ESRS	1/4
AA1000AP	1/4

In the real estate sector, we find various governance and reporting standards but only one and two social and environmental standards, respectively. In addition, no overwhelming preference for any particular standard can be identified in this sector other than that all companies chose to use both the GRI and the ATHEX ESG index reporting standards, in combination with the rest of the reporting standards.

3.4. Sector ESG Materiality

The energy sector has identified climate, energy, and resource management as material topics related to the environment (Table 24). This is also reflected in the use of standards related to the environment, such as the ISO standards for environmental management (ISO 14001), energy management (ISO 50001), and GHG management (ISO 14064). The material topics included in the climate concerns in the energy sector include climate change, climate change mitigation, climate adaptation, resilience, and transition. The energy concerns are mostly stated as the promotion of renewable energy sources (RESs) and energy management, energy access, and availability. However, when it comes to waste or water management, no specific standard seems to be used.

In the social scope material topics have been identified, such as concerns about human rights, quality of employment, local stakeholders, and customer relations and satisfaction. However, this is not ultimately reflected in the standards used, since the only area that has both been identified as a material issue and a related standard has been utilized is that of the health and safety of employees (ISO 45001).

The material topics related to governance are varied and include regulatory compliance, business ethics and continuity, creation of economic value, data privacy, and mobility. These priorities are also reflected in the standards used. We observed the use of standards relating to risk management (ISO 31000, ISO 31010), information security management (ISO 27000), business continuity (ISO 22301), and road safety (ISO 39001). Nevertheless, we also observed the use of standards that did not relate to any topics that were mentioned as material by any of the companies in this sector, such as the ISO 37001 (anti-bribery management systems).

Table 24. Material topics identified in the energy sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate concerns	x		
Biodiversity	x		
Decarbonization	x		
Energy concerns	x		
Circular Economy/Circularity	x		
Waste management	x		
Water management	x		
Air pollution (emissions, GHG)	x		
Responsible supply chain	x	x	
Economic impact		x	
Human rights (diversity, inclusion, equal opportunities)		x	
Employment (education, development, retention)		x	
Health, safety and wellbeing (employees)		x	
Local communities		x	
Customer relations and satisfaction		x	
Innovation and digital transformation		x	
Data privacy			x
Regulatory compliance			x
Business continuity			x
Business ethics and governance			x
Mobility			x
Economic Value Creation			x

The materials sector has identified climate, energy, resource management, and biodiversity as material topics related to the environment (Table 25). This is also reflected in the use of standards related to the environment, such as the ISO standards for environmental management (ISO 14001, ISO 14040, ISO 14044), energy management (ISO 50001), and GHG management (ISO 14064), water efficiency management (ISO 46001). The material topics included in the climate concerns in the materials sector include climate change, climate change mitigation, and climate adaptation. The energy concerns are mostly stated as energy, responsible energy management, energy consumption, energy efficiency and renewable sources, and energy management. However, when it comes to waste or raw material management, no specific standard seems to be used.

Within the social context, several material topics have been identified, such as concerns about human rights, quality of employment, local stakeholders, customer relations and satisfaction, product innovation, and safety. This sector seems to focus on standards relating to product quality. However, the rest of the social material topics identified are not necessarily reflected in the standards used, since the areas that have both been identified as a material issue and a related standard has been utilized are those of the health and safety of employees (ISO 45001) and of social responsibility (ISO 26000).

Table 25. Material topics identified in the materials sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate concerns	x		
Biodiversity	x		
Energy concerns	x		
Circular Economy/Circularity	x		
Waste management	x		
Water management	x		
Raw materials (virgin, recycled, sustainable)	x		
Air emissions (GHG, direct and indirect)	x		
Pollution prevention and control	x		
Decarbonization	x		
Responsible sourcing	x	x	
Human rights (Diversity, inclusion, equal treatment and opportunities for all)		x	
Employment (education, development, retention, working conditions)		x	
Health, safety and wellbeing (employees, customers)		x	
International presence		x	
Local communities		x	
Stakeholder engagement		x	
Customers and end users		x	
Product innovation		x	
Product quality and safety		x	
Digitalization		x	x
Data privacy			x
Regulatory compliance			x
Corruption and bribery			x
Business continuity			x
Business ethics and governance			x
Strategy and investments			x
Anti-competitive behavior			x
Infrastructure			x
Economic Value Creation			x
Profitability			x
Extroversion and continuous growth			x

The material topics related to governance are varied and include regulatory compliance, business ethics and continuity, anti-corruption, creation of economic growth, data privacy, and infrastructure. These priorities are also reflected in the standards used. We observed the use of standards relating to risk management (ISO 31000), information security management (ISO 27000, ISO 27701), and anti-bribery management (ISO 37001). However, we also observed that some material topics are not reflected in the standards used, such as the issue of business continuity.

The industrial sector has identified climate, energy, resource management, and biodiversity as material topics related to the environment (Table 26). This is also reflected in the use of standards related to the environment, such as the ISO standards for environmental management (ISO 14001), energy management (ISO 50001), GHG management (ISO 14064), and adaptation to climate change (ISO 14090). The material topics included in the climate concerns in the industrial sector include climate change, and climate change mitigation and adaptation. The energy concerns are mostly stated simply as energy, energy transition, energy management. Nonetheless, when it comes to waste or water management no specific standard seems to be used.

Table 26. Material topics identified in the industrial sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate concerns	x		
Biodiversity	x		
Energy concerns	x		
Circular Economy /Circularity	x		
Waste management	x		
Water management	x		
Air emissions (GHG, air quality)	x		
Pollution prevention and control	x		
Responsible sourcing	x	x	
Indirect social impacts		x	
Human rights (equal opportunities, diversity)		x	
Local communities		x	
Employment (security, attraction, retention, education and development)		x	
Health, safety and wellbeing (employees, customers)		x	
Social dialogues		x	
Product and service innovation		x	
New technologies/Digitalization			x
Risk management			x
Data privacy			x
Corruption and bribery			x
Transparency			x
Business continuity			x
Business ethics and governance			x
Infrastructure			x
Profitability			x

In the social domain, various material topics have been identified, such as concerns about human rights, quality of employment, local stakeholders, customer relations and satisfaction, product innovation, and safety. This sector seems to have used only one standard relating to product quality. Nevertheless, the rest of the material topics identified in the social sphere are not necessarily reflected in the standards used, since the areas that have both been identified as a material issue and a related standard has been utilized are those of the health and safety of employees (ISO 45001) and of social responsibility (ISO 26000).

The material topics related to governance are varied and include business ethics and continuity, anti-corruption, creation of economic growth, data privacy, and infrastructure. These priorities are also reflected in the standards used. We observed the use of standards relating to risk management (ISO 31000), business continuity (ISO 22301), information security management (ISO 27000), and anti-bribery management (ISO 37001, ISO 37002).

The consumer discretionary sector has identified climate, energy, and resource management as material topics related to the environment (Table 27). This is also reflected in the use of standards related to the environment, such as the ISO standards for environmental management (ISO 14001), energy management (ISO 50001), and GHG management (ISO 14064). The material topics included in the climate concerns in the sector include climate change and climate stability. The energy concerns are stated as energy, energy transition, energy management, and investing in renewable energy sources. However, when it comes to waste, water, or resource management, no specific standard seems to be used.

Table 27. Material topics identified in the consumer discretionary sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate concerns	x		
Energy concerns	x		
Circular Economy/Circularity	x		
Waste management	x		
Natural resources management (raw materials)	x		
Water management	x		
Air emissions (GHG)	x		
Sustainable supply chain	x	x	x
Stakeholder engagement		x	
Human rights (Diversity)		x	
Local communities		x	
Education and development		x	
Equal opportunities		x	
Employment (engagement, retention)		x	
Health, safety and wellbeing (employees, customers)		x	
Positive social impact		x	
Customer satisfaction		x	
Product and service quality		x	
Product and service innovation		x	
New technologies/Digitalization			x
Risk management			x
Strategy and investments			x
Data privacy			x
Corruption and bribery			x
Transparency			x
Regulatory compliance			x
Business continuity			x
Business ethics and governance			x
Economic Value Creation			x

Regarding the social dimension many material topics have been identified, such as concerns about human rights, quality of employment, local stakeholders, customer relations and satisfaction, product innovation, and safety. This sector seems to use standards relating to product quality, health and safety of employees (ISO 45001), and social responsibility (ISO 26000).

The material topics related to governance are varied and include business ethics and continuity, anti-corruption, creation of economic growth, data privacy, and infrastructure. These priorities are also reflected in the standards used. We observed the use of standards relating to risk management (ISO 31000), business continuity (ISO 22301), and information security management (ISO 27000). However, we also observed that some material topics are not reflected in the standards used, such as the issue of anti-bribery.

The consumer staples sector has identified climate, energy, resource management, and biodiversity as material topics related to the environment (Table 28). This is also reflected in the use of standards related to the environment, such as the ISO standards for environmental management (ISO 14001), energy management (ISO 50001), and GHG management (ISO 14064). However, when it comes to waste, water, or resource management, no specific standard seems to be used.

Table 28. Material topics identified in the consumer staples sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate change and stability	x		
Energy management (energy consumption)	x		
Biodiversity	x		
Circular Economy/Circularity	x		
Waste management	x		
Natural resources management (raw materials, resource intensity)	x		
Water management	x		
Air emissions (GHG, air quality)	x		
Supply chain management	x	x	x
Human rights (Diversity and inclusion)		x	
Socio-economic impact		x	
Local communities		x	
Employment (engagement, retention, education and development)		x	
Health, safety and wellbeing		x	
Customers and end-users		x	
Product waste (food waste)		x	
Product quality and safety		x	
Product and service innovation		x	
Strategy and investments			x
Data privacy			
Transparency			x
Corporate citizenship			x
Business ethics and governance			x
Infrastructure			x
Economic Value Creation			x

In the social sphere, many material topics have been identified, such as concerns about human rights, quality of employment, local stakeholders, customer relations and satisfaction, product innovation, and safety. However, most material topics do not seem to be reflected in the standards used by this sector, except for health and safety of employees (ISO 45001).

The material topics related to governance are varied and include business ethics and governance, creation of economic growth, data privacy, and infrastructure. The issue of data privacy is also reflected in the standards used. These priorities are also reflected in the standards used (ISO 27000), but the rest of the material topics are not necessarily reflected by the use of a standard.

The healthcare sector has identified climate, energy, and resource management as material topics related to the environment (Table 29). This is also reflected in the use of standards related to the environment, such as the ISO standards for environmental management (ISO 14001), and GHG management (ISO 14064). However, when it comes to waste, water, or energy management, no specific standard seems to be used.

Table 29. Material topics identified in the healthcare sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate change	x		
Energy management (energy consumption)	x		
Waste management	x		
Water management	x		
Air emissions	x		
Supply chain management	x	x	x
Human rights (diversity, equal opportunities)		x	
Community support		x	
Access to medical care		x	
Employment (engagement, retention, education and development)		x	
Health, safety and wellbeing		x	
Customer satisfaction		x	
Product quality and safety		x	
Product and service innovation		x	
Strategy and investments			x
Intellectual property			x
Digitalization			x
Data privacy			
Transparency			x
Business ethics and governance			x
Infrastructure			x

In the social domain, material topics have been identified, such as concerns about human rights, quality of employment, local stakeholders, customer relations and satisfaction, product innovation, and safety. This sector seems to use standards relating to product quality relating to health.

The material topics related to governance are varied and include business ethics, data privacy, and infrastructure. These priorities are not necessarily reflected in the standards used.

The financial sector has identified climate, energy, resource management, and biodiversity as material topics related to the environment (Table 30). This is also reflected in the use of standards related to the environment, such as standards for environmental management (ISO 14001), energy management (ISO 50001), and GHG management (ISO 14064, GHG Protocol Corporate Accounting and Reporting Standard, Global GHG Accounting and Reporting Standard for the Financial Industry). The material topics included in the climate concerns in the financial sector include climate change, climate stability, climate change mitigation, and adaptation. The energy concerns are mostly stated simply as energy, energy conservation, energy consumption, financing energy transition increased use of renewable energy sources. However, when it comes to waste, water, or resource management, no specific standard seems to be used.

In the social sphere, many material topics have been identified, such as concerns about human rights, quality of employment, local stakeholders, customer relations and satisfaction, product innovation, and safety. This sector seems to use standards relating to product quality, health and safety of employees (ISO 45001), and social responsibility (ISO 26000).

The material topics related to governance are varied and include business ethics and continuity, anti-corruption, creation of economic growth, data privacy, and infrastructure. These priorities are also reflected in the standards used. We observed the use of standards relating to risk management (ISO 31000), business continuity (ISO 22301), information security (ISO 27000, ISO 27017, ISO 27018), anti-bribery, and whistleblowing (ISO 37001, ISO 37002).

The information technology sector has identified climate, energy, and resource management as material topics related to the environment (Table 31). This is also reflected in the use of standards related to the environment, such as the ISO standards for environmental management (ISO 14001), and GHG management (ISO 14064). However, when it comes to waste, water, or energy management, no specific standard seems to be used.

Within the social framework various material topics have been identified, such as concerns about human rights, quality of employment, local stakeholders, customer relations and satisfaction, product innovation, and safety. However, only one standard from the ones that have been used falls under the social category: that of health and safety of employees (ISO 45001).

The material topics related to governance are varied and include business ethics and continuity, anti-corruption, creation of economic growth, data privacy, and infrastructure. Not all these priorities seem to be reflected in the standards used. We observed the use of standards relating to business continuity (ISO 22301), information security, and security techniques (ISO 27000, ISO 27701).

The communication services sector has identified climate, energy, and emissions as material topics related to the environment (Table 32). This is also reflected in the use of standards related to the environment, such as the ISO standards for environmental management (ISO 14001) and energy management (ISO 50001).

In the social domain, many material topics have been identified, such as concerns about the health and safety of employees, customer relations and satisfaction, product innovation, and safety. However, only one social standard is being used: that of health and safety of employees (ISO 45001).

The material topics related to governance are varied and include business ethics and continuity, risk management, data privacy, and infrastructure. These priorities are also reflected in the standards used. We observed the use of standards relating to risk management (ISO 31000), business continuity (ISO 22301), and information security (ISO 27001, ISO 27002). However, we also observe the use of standards that do not correspond to any of the material topics mentioned such as anti-bribery and whistleblowing (ISO 37001, ISO 37002).

Table 30. Material topics identified in the financial sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate concerns	x		
Biodiversity	x		
Energy concerns	x		
Circular Economy/Circularity	x		
Waste management	x		
Water management	x		
Pollution prevention and control (GHG reduction)	x		
Sustainability integration into risk management	x	x	x
Responsible/sustainable banking	x	x	
Social contribution		x	
Social impacts		x	
Human rights (diversity, equal treatment and opportunities for all)		x	
Cultural Heritage		x	
Employment (longevity, satisfaction, education and development, work-life balance)		x	
Health, safety and wellbeing		x	
Working conditions		x	
Relationship with suppliers		x	
Supporting young people		x	
Social inclusion of consumers and/or end-users		x	
Customer/Investor/Shareholder Satisfaction		x	
Political engagement		x	
Information-related Impacts for Consumers and/or End-users		x	
Equal access to banking/finance		x	
Contact with the company		x	
Product and service innovation		x	
Providing modern and responsible products and services		x	
New technologies/Digitalization			x
Data privacy			x
Regulatory compliance			x
Corruption and bribery			x
Whistleblower protection			x
Business continuity			x
Corporate culture			x
Mobility/Infrastructure			x
Economic Value Creation			x
Solvency			x

Table 31. Material topics identified in the information technology sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate change	x		
Energy management (energy saving)	x		
Environmental impacts of development projects	x		
Waste management	x		
Water management	x		
Air emissions (GHG)	x		
Responsible sourcing	x	x	
Ethical trade		x	
Local communities		x	
Equal opportunities		x	
Employment (attraction, retention, education and development)		x	
Diversity		x	
Health, safety and wellbeing (employees and customers)		x	
Product and service innovation (smart and safe cities)		x	
Product security (cybersecurity)		x	
New technologies/Digitalization			x
Data privacy			x
Anticompetitive behavior			x
Corruption and bribery			x
Business continuity			x
Business Ethics			x
Risk management			x
Economic Value Creation			x

Table 32. Material topics identified in the communication services sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate change	x		
Energy	x		
Air emissions (GHG)	x		
Health, safety and wellbeing (employees)		x	
Customer communication and satisfaction		x	
Product and service safety (Electromagnetic field safety and management)		x	
(Product security/cybersecurity)		x	
Data privacy			x
Business continuity			x
Business Ethics			x
Risk management			x

The utilities sector has identified climate, energy, resource management, and biodiversity as material topics related to the environment (Table 33). This is also reflected in the use of standards related to the environment, such as standards for environmental management (ISO 14001), energy management (ISO 50001), and GHG management (ISO 14064, GHG Protocol Corporate Accounting and Reporting Standard). However, when it comes to waste, water, or resource management, no specific standard seems to be used.

Table 33. Material topics identified in the utilities sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate (climate change resilience, adaptation, mitigation)	x		
Energy (management, efficiency, transition, green energy)	x		
Biodiversity (Ecosystem protection)	x		
Waste management	x		
Water management	x		
Circular economy	x		
Natural resources management	x		
Air emissions (GHG)	x		
Responsible sourcing	x	x	
Local communities		x	
Employment (attraction, retention, Education and development)		x	
Working conditions		x	
Health, safety and wellbeing (employees and customers)		x	
Service accessibility		x	
Customer satisfaction		x	
Product and service innovation		x	
Product security (network security, reliability)		x	
New technologies/Digitalization			x
Data privacy			x
Regulatory compliance			x
Corruption and bribery			x
Business continuity			x
Corporate culture			x
Business ethics and governance			x
Transparency			x
Economic Value Creation			x

Within the social context, material topics have been identified, such as concerns about the quality of employment, local stakeholders, customer relations and satisfaction, product innovation, and safety. However, most material topics do not seem to be reflected in the standards used, with the only exception being the health and safety of employees (ISO 45001).

The material topics related to governance are varied and include business ethics and continuity, anti-corruption, creation of economic growth, and data privacy. Some of the priorities are also reflected in the standards used. We observed the use of standards relating

to risk management (ISO 31000), business continuity (ISO 22301), and information security (ISO 27001).

The real estate sector has identified climate, energy, resource management, and biodiversity as material topics related to the environment (Table 34). Only some of these priorities are also reflected in the use of standards related to the environment, such as standards for environmental management (ISO 14001), and GHG management (ISO 14064).

Table 34. Material topics identified in the real estate sector with ESG categorization.

Material Issue	Environmental	Social	Governance
Climate change	x		
Energy (efficiency, consumption)	x		
Biodiversity (Ecosystem protection)	x		
Decarbonization	x		
Waste management	x		
Water management	x		
Circular economy	x		
Resource management	x		
Air emissions (GHG, air pollution)	x		
Responsible procurement	x	x	
Affected communities		x	
Human rights (diversity and inclusion, equal opportunities)		x	
Employment (attraction, retention, education and development)		x	
Health, safety and wellbeing (employees, customers)		x	
Consumers and end-users (satisfaction)		x	
Sustainable products (sustainable buildings)	x	x	
Data privacy			x
Risk management			x
Economic Value Creation			x

In the social sphere, many material topics have been identified, such as concerns about human rights, quality of employment, local stakeholders, customer relations and satisfaction, product innovation, and safety. However, most material topics do not seem to be reflected in the standards used, with the only exception being the health and safety of employees (ISO 45001).

The material topics related to governance are varied and include risk management, creation of economic growth, and data privacy. Some of the priorities are also reflected in the standards used. We observed the use of standards relating to risk management (ISO 31000) and information security (ISO 27001).

4. Discussion

The main management and reporting standards used by the 60 listed companies of the ATHEX ESG index are presented and analyzed in Section 3.3 of the results in our article. For the first time, all management standards and all the ESG reporting standards used by the 60 listed companies operating in Greece are presented per sector. A categorization by GICS sectors utilizes a globally preferred standardized framework, allowing this study to

be universally accessible and available for comparisons or benchmarking. The data offer fruitful grounds for further analysis and future research.

The primary standards employed by firms are reporting standards, irrespective of the sector they belong to. There are multiple explanations for this. Firstly, all sample companies are listed in the specific ESG index, namely ATHENS ESG, which, in order to accept a company in the index, evaluates it according to an “ESG transparency score” [34]. In practical terms, this is tantamount to the necessity of a published ESG report by each company listed in the index. In addition, some of the firms listed are required by Greek law 4403/2016 [35]—a law resulting from the EU’s NFRD—to publicly publish a sustainability report. However, within this context, the companies were allowed to choose any reporting standard they preferred [36]. The aforementioned variety of choices is perhaps why we noticed that no report utilized a single reporting standard, meaning that all reports used at least two or more standards in conjunction with each other to conduct their sustainability reporting. Perhaps even more importantly, the high number of reporting standards can be explained by the fact that investors and clients are putting more pressure on companies all along the value chain to report on their overall ESG performance, and the reporting companies wish to align with the requirements put forth by these clients and investors. This aligns with the existing literature that we presented earlier in the article and causes no surprises [1–3,9,11,17,25].

We can observe that the Global Reporting Initiative (GRI), the United Nations Global Compact (UNGC), and ATHEX ESG dominate as the most significant reporting standards used in every sector, while SASB, the European Sustainability Reporting Standards, and AA1000 are used by a limited number. One can interpret this in various ways. Firstly, GRI is the most widely used ESG reporting standard worldwide, with the majority of ESG reporters using a specific set of standards [37]. Furthermore, the Global Compact Network Greece is very active, numbering more than 110 member companies and promoting the United Nations Global Compact (UNGC), which leads to the creation of a Communication on Progress (CoP) as an easier and more flexible ESG reporting option [38]. Notably, we identified some early adopters of ESRS. These early adopters are companies that belong to the first wave that has to comply with CSRD—they were already publishing a sustainability report under NFRD—and thus have to publish a sustainability statement in 2025 or 2024 according to the ESRS. Hence, a likely explanation is that these companies started their preparation a year early to be ready for the ESRS requirements.

Moving to the next research questions, we did not identify any particular differentiations per sector or sector preferences regarding management and reporting standards. Although we would have expected to see different management standards in different sectors, this was not the case. In the same context, we recognized, as expected, differences among the material ESG topics of each sector, but those differences did not lead to different choices of management standards. Perhaps one might have expected to see management standards about all material ESG issues. ESG, CSR, and sustainability all focus on managing impacts, enhancing positive ones, and reducing and mitigating negative ones. Perhaps companies started implementing management standards before recognizing their impacts through a materiality analysis exercise. Thus, future research is needed to see incentives for the adoption of particular standards and examine further the impact of materiality on the choice of management standards.

Regarding our last research question about whether the management standards presented in the sustainability reports of the 60 companies in the ATHEX ESG index could fall under the umbrella of ESG, the answer is an affirmative one. We observed that the management standards were presented in the reports in the environmental, social, or governance sections of their respective sustainability reports by the reporting companies.

This follows logically, as one of the most common qualitative and descriptive KPIs for most standards is to provide a narrative about how each ESG topic is managed. We could therefore argue that all quality management systems form an interconnected system toward better sustainable performance and may help the companies become better in their daily operations, which, as it has been argued [39], is the essence of corporate responsibility. Thus, besides the sustainability reporting standards, which belong a priori to the sustainability category, all other management standards could fall under sustainability categories such as environment, social, and governance.

Our research, grounded in content analysis, provides useful insights into the sustainability management and reporting standards used in Greece. It may serve as a foundation for more discourse and research. Initially, it can be directly implemented on another market's ESG index to compare the outcomes. In-depth interviews with the 60 quality, CSR, and sustainability managers of the organizations being studied would also be an important part of the study. This would help researchers understand the reasons behind the management standards that were put in place and how they were planned. We believe that comprehensive qualitative research in this field is needed to better understand the interconnection between materiality and standards used and to highlight the motives behind the implementation of a management standard.

5. Conclusions

This paper examined the CSR and sustainability standards utilized by contemporary enterprises in Greece. It drew on a sample of 60 companies from the ATHEX ESG index, categorized into sectors based on the Global Industry Classification Standard (GICS) to make our analysis accessible for global comparisons. The content analysis of the sustainability reports of the indexed companies revealed the preferred sustainability reporting and ESG (Environmental Social Governance) related management standards utilized by these companies. Therefore, we concluded that all companies, regardless of sector favored Reporting standards, with a clear preference towards the ATHEX ESG index, since all companies belong to this index; however, they also overwhelmingly comply with widely accepted frameworks such as the GRI (Global Reporting Initiative) and the UNGC (United Nations Global Compact). Many companies used these standards in conjunction with the SASB and ESRS, especially while they conducted their materiality analysis. The use of such internationally recognized standards indicates the companies' inclination towards reporting transparent and consistent sustainability practices.

Additionally, the paper tried to link the standards used with their respective industries and uncover if a sector preference exists. When it comes to the ESG-related management standards, there is an overwhelming preference for the use of ISO standards. Specifically, the standards related to the environment that were widely implemented across sectors were most commonly the ISO 14001 (environmental management), ISO 50001 (energy management), and ISO 14064 (greenhouse gas management). The use of social standards was more limited when compared to the use of environmental and governance standards. Most sectors showed a preference for ISO 45001 (health and safety management), but the materials and healthcare sectors showed a clear preference for product quality standards by using standards such as ISO 13485 for medical devices and ISO 15378 for packaging materials. The governance standards used by the companies were numerous and varied. For example, across the companies belonging to the financial sector, ten different standards were utilized. Once again, the use of internationally recognized standards indicates the willingness to align with the global best practices of the ATHEX ESG-indexed companies.

Furthermore, the material issues of each organization, as identified in their materiality study, were analyzed by the sector to find any connection between them and the ESG

standards used. This study was not able to find a clear connection between the material issues identified in each sector and the standards used. However, the most common material issues are climate change, energy, resource management, and good governance practices. The use of environmental ISO standards for environmental, energy, and resource management seems to align with the material issues identified; however, when it came to resource management, such as waste and water management, the material issues were rarely accompanied by the relative management standards. Similarly, broader social concerns that the companies identified as material issues like human rights did not align with any of the used standards. Ultimately, further research is needed to obtain more concrete results, such as a qualitative study with the quality, CSR, and sustainability managers of the 60 enterprises to help researchers make more in-depth connections on how ESG-related management standards are chosen and their connection to each company's material issues.

This paper highlights an under-researched area and offers opportunities for cross-country comparisons and future research. It contributes to the knowledge of how major companies in Greece conduct their sustainability reporting across all GICS sectors, what reporting and ESG-related management standards they use, and how the material topics mentioned in these reports could potentially align with the management standards these companies have chosen. However, we must acknowledge certain limitations. Firstly, the study is restricted to companies included in the ATHEX ESG index, thereby constraining the applicability of the findings outside of Greece. The study shows how the sustainability reporting environment is currently evolving in Greece, not worldwide. To learn more about trends in specific industries worldwide more countries need to be included in future studies. The study exclusively utilizes publicly accessible sustainability reports, which inadequately reflect the internal motives, obstacles, and strategic decision-making involved in the implementation of ESG standards. Future study directions would be to use this research as a starting point and perform interviews with sustainability managers to elucidate the motivations of organizations for adopting particular management standards.

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