

A qualitative model of the firm's sustainability reporting(SR) requirements in the Iranian capital market, inspired by the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) standards

Mohsen Zhaleh Azadzanjani, Naghi Fazeli*, Khosro Faghani Makrani

Department of Accounting, Semnan branch, Islamic Azad University, Semnan, Iran

Abstract

The paper primarily aims to provide a qualitative model of the company's sustainability reporting requirements in the Iranian capital market, inspired by the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) standards. The study population can be divided into three general three groups for quantitative data analysis: (1) Industry experts (2)Public stakeholders, (3)Academic experts, categorized. Finally, after the distribution of 200 instruments, the sample size is equal to 180 research experts ,sampling methods (judgmental) and snowball sampling. The data collected is related to period between the winter of 2022 and the spring of 2023. The research data analysis method is "content analysis" in the MAXQDA environment. One of the main findings of the research is that the qualitative model of SR in Iran's capital market includes the main variables such as management of the company's legal and regulatory environment in terms of leadership and governance requirements in SR ; Health and safety of human capital in human capital requirements of SR ; Stakeholders' performance Disclosure of the most crucial company performance criteria in the stakeholders' performance of the management's interpretive report; The flexibility of the business model based on costs in the economic requirements of the business model and innovation in SR ; Customer welfare was presented based on the promotion of education and training in the social capital requirements of SR and the management of energy and fuel consumption in the environmental requirements of SR . The current research is innovative in various aspects. First, the recent research is considered innovative in terms of subject matter. According to the compilation of international GRI standards of 2018, the SASB of 2019, the conceptual framework of integrated reporting of 2016 at the international level and the interpretive reports of the management of companies admitted to the Tehran Stock Exchange in 2016, and the obligation of publishers to disclose the details of energy consumption approved since November, 2021 efforts to examine the relationship between the financial and non-financial aspects of the sustainability of each type of this reporting thoroughly seem necessary. Also, , in this paper, an effort is made to address all the critical criteria of economic,

environmental, and social performance (KPI) of the SR of the world and Iran. And finally, by presenting the SR model of companies, it takes the first step in providing professional sustainability reports in Iran.

Keywords: reporting; sustainability reporting(SR); GRI reporting standard; SASB reporting standard; Capital Market

1. Introduction

Traditional financial accounting procedures do not measure and reveal all the elements that cause success, and the elements that affect the company's progress should be addressed. Therefore, stakeholders - for example, institutional investors, insurance companies, individual shareholders, and non-governmental organizations demand more non-financial information from companies, and these demands will make companies more and more motivated to prepare and publish environmental and social reports, (Francesco Bellandi , 2017).

Meanwhile, developments in companies worldwide, especially about sustainable development, show the importance of companies integrating sustainability aspects into their corporate reporting process. The accountability aspect of the companies is not complete without considering the dimensions of sustainability; therefore, publishing and disclosing the requirements of sustainability reports in the economic, environmental, and social sectors in the annual reports of the companies or as a separate report provides valuable information for a wide range of stakeholders. The content of sustainability reports or in the form of independent reports, including the management interpretive report and the disclosure of material and energy consumption information of the companies listed in the Tehran Stock Exchange or the annual reports of those companies, has attracted the attention of the Iranian capital market in recent years. These reports are published as mandatory or voluntary disclosure of hidden information in the financial statements and reports of the board of directors to the shareholders' assembly. This type of reporting has fundamental flaws and needs regular and consistent compliance with several common SR standards used worldwide, including the international GRI standards and the SASB (Sustainability Accounting Standards Board) standards. Also, preparing environmental, social, and governance reports and sharing this information with high security and effectively and immutably in the form of a coherent information platform for making strategic decisions at the macro-economic level requires uniform, comprehensive requirements at the national level by the

custodians of Iran's capital market should be compiled and made mandatory (Zhaleh Azad Zanjani, 2018b).

First, the present research examines the reports of the companies admitted to the stock exchange, including financial statements, the report of the board of directors to the assembly and the management's interpretive report, and the disclosure report of the amount of energy consumption of the companies admitted to the Tehran stock exchange.

Then, by using a sample group composed of the main groups of industries whose names are in the list of companies admitted to the stock exchange, we want to examine the status of SR of these companies and its effects in providing helpful information for the stakeholders, to investigate quantitatively and qualitatively. To what extent do the companies of the main groups listed in the companies admitted to the stock exchange adhere to the requirements of SR in the world, and whether it is possible to prepare an optimal, local, and beneficial model for the Iranian capital market under the standards of GRI and SASB.

In this sense, the information of all the publishers accepted in the Tehran Stock Exchange in the groups of food industries (10 companies), medicine (14 companies), automobiles (26 companies), and petrochemicals (25 companies) for the year 2021 in terms of the level of adherence of companies to sustainable structures companies and the degree of compliance of financial and non-financial reports of these companies with the standards of GRI and international integrated reporting and SASB examined.

This research can contribute to developing the literature in this field by presenting a comprehensive and complete model of corporate SR . It can provide a broad perspective of SR based on different but integrated dimensions of the company's information environment.

2. Theoretical review and background

2.1 Corporate sustainability

Corporate Sustainability is an approach to creating long-term value for the company's stakeholders through an environmentally friendly business strategy. In this approach, efforts are made to focus on economic, cultural, social, environmental, and ethical dimensions. Also, long-term goals should be preserved to achieve short-term goals (Hajiha and Chenari, 2023). Corporate sustainability is an economic and pragmatic approach that can create opportunities and risks for trade and commerce. The subject of corporate sustainability is a broad, complex, and evolving concept that

includes diverse attitudes and ideas. In the beginning, this concept was related to the financial perspective of companies. Also, its primary goal was to maximize shareholder value so that companies benefit through long-term sustainability (Aljajawy et al., 2022). The nine principles of sustainability and corporate responsibility are (Nwobu, 2017; Asogwa, 2023 and Parfitt, 2022):

Table 1. The nine principles of sustainability and corporate responsibility (source: Nwobu, 2017; Asogwa, 2023 and Parfitt, 2022)

Professional ethics of the company	Ethical companies establish and promote fair and honest standards and practices for all the company's stakeholders and encourage the adoption of such an approach among other stakeholders (including business partners, distributors, and suppliers).
Business relations	Companies should establish mutual relations with their suppliers by treating them as valuable and long-term partners, inviting the cooperation and participation of their talented forces, receiving their ideas and opinions, and attracting the loyalty of these partners.
Participation in local communities	Companies that value partnerships with local communities and economic development partner with community activists and companies that seek to strengthen health, education, safety, and economic development standards.
Transparency of financial information	Through open and fair communication, transparent companies fully disclose information about the company's past, present and, if possible, future performance to current and potential investors and lenders.
Financial returns for investors	The company compensates the capital provided by investors and lenders by providing a competitive rate of return on investment and protecting its assets. The interests of investors and lenders should be identified, and the company should establish formal mechanisms to facilitate ongoing dialogue with its investors.
Company management system	This principle reflects the commitment to effective and conscientious management of all resources and recognizes the fiduciary responsibility of the board of directors and company managers to focus on the interests of all stakeholders.
Value of products and services	Adherence to this principle prompts companies to respect the needs, hopes and rights of investors and end consumers, to offer high-quality products and services, and to be committed to customer satisfaction, truth, and safety.
Environmental Protection	The company is always trying to continuously improve the efficiency of using all types of energy, reducing the consumption of water and other natural resources, and reducing the release of hazardous substances into the

The company's recruitment practices

air, water and soil. Also, adheres to its commitment to maximizing the production and use of recycled and recyclable materials, increasing the durability of its products, and minimizing packaging.

Companies that admit to this principle know that paying attention to human capital and investing in it benefits human capital, society, and the company itself in the long run. For this purpose, they offer programs such as salary compensation and benefits, family time during the day, and career development opportunities.

Successful companies in the field of sustainability usually have clear strategies that direct the company's sustainability activities, and the relationship between sustainability and the company's strategy in these companies is usually clearly described. In addition, these companies' sustainability activities and goals are usually aligned, and integrating them shapes their corporate structure and management processes. In these companies, sustainability is not a secondary element but a part of how the company functions (Küçükgül et al., 2022).

2.2. Corporate sustainability reporting

From another point of view, sustainability reporting (SR) is the company's economic, social, and environmental performance, which shows how a business unit will implement its development plans in the future, considering these issues. For this reason, corporate SR policies are considered an essential part of corporate strategies. In this way, large companies usually accept their sustainability reports as an organizational strategy (UNGC, 2015).

The contemporary world faces numerous environmental and social challenges whose proper administration and management depend on the attention and commitment of industries to SR (Fathi, 2023). In other words, the structures, laws, and regulations of SR in government and industry are mandatory pressures for SR. However, the lack of government supervision on reporting and the industry managers' inattention to it reduces the role of these pressures. Professional and scientific institutions create normative pressure for SR in this industry. But the inattention of auditing companies to this reporting moderates this pressure (Mir Zamani et al., 2019). Today, sustainable development is one of the most essential concerns of industries and companies, and the survival of companies in the competitive market implies having corporate sustainability strategies.

Despite numerous frameworks and standards, it is difficult for most companies to find sustainability criteria in each specialized area and report on it (Kaygbadi et al., 2018). SR discloses environmental, social, and governance issues. However, in the service industry, guidelines have yet to be prepared regarding SR, and no service company has designed SR (Rahmani et al., 2022). The benefits of SR (Alawattage et al., 2023; Rosati and Faria, 2019 and Palea, 2018):

Table 2. Benefits of SR (source: Alawattage et al. 2023; Rosati and Faria, 2019 and Palea, 2018)

Identification of risks and better understanding of opportunities and challenges	One of the benefits of SR is that it helps to have an overall and comparative view of the company. If a company benefits from real data and analysis regarding its conditions, would it not be easier to plan?
Clarifying the company's strategy and goals	A company can document its long-term strategies and goals in the form of SR and plan for it accurately; clarifying this information allows companies to review and improve.
Increasing motivation and loyalty of human capital	Today's human capital examines its employers with much higher standards than in the past decades, and the culture that governs a company is of great importance for human capital. SR creates more trust and loyalty in human capital by showing the company's achievements in human capital.
Improving brand reputation and welcoming investors	It is no secret that investors are also looking for companies responsible for society in today's market. Therefore, by compiling and publishing SR, it can be ensured that what the company advocates will also reach the ears of consumers.

The World Organization Council for Sustainable Development (2002) defines sustainability reports as public reports by companies to provide a picture of the company's economic, environmental, and social activities to internal and external stakeholders. According to the content of GRI (2018), the company will be measured for its performance towards achieving the sustainable development goal, its activities will be disclosed, and it will be accountable to the stakeholders. SR is a report about the company's daily activities' economic, environmental, and social impacts. SR is the expression of a company's performance. It impacts the three main sides of the triangle of sustainable development, i.e., society, economy, and environment. It is directly related to the concept of social responsibility of business enterprises (Asogwa, 2023). A company undertakes Corporate social responsibility so that, in addition to trying to achieve its own goals, it

is aware of the effects and consequences of its activities towards its stakeholders and tries to improve these effects and consequences. Sustainability reports go far beyond what is tangibly visible from a company's achievements. Titles such as the social responsibility and non-financial results reports are also synonymous with SR . Many companies publish such a report annually (Michalak et al., 2023).

2.3 Sustainability reporting requirements

One of the ways to express and measure the activities and effects of a company in various economic, social, and environmental fields is SR . In today's world, most international companies publish an annual report of their activities and environmental impact. The first step in developing SR is choosing the proper framework. For any company, data management and reporting issues are inevitable (Del Mar Alonso-Almeida et al., 2014). The SR framework helps the company achieve its goals for measuring and improving its environmental and social impacts by specifying priorities. As companies worldwide increasingly embrace SR , standards, and frameworks, it has emerged that companies can use them to measure and express their achievements (Aljajawy et al., 2022; Cho et al., 2022).

The Fifth Industrial Revolution incorporates concepts such as sustainability, big data, etc., sustainability is among the main goals of countries and companies. But Iran has paid less attention to this issue. In other words, there are currently causal, intervening, and context conditions, the strategies and consequences of this type of reporting have not been investigated. The results of the research, Abdi, Mostafa, Et al. (2019) show that the main Causal conditions that lead to sustainability reporting are environmental requirements, environmental incentives, environmental pressures, country's cultural and social characteristics, the country's political characteristics and the international environment's characteristics. Research findings also show that in order to achieve sustainability reporting, strategies should be developed such as identifying the entity responsible for sustainability, formulating principles and sustainability standards, establishing a sustainability and social responsibility committee in companies, familiarizing and training sustainability, establishing an internal control and effective reporting system and use new technologies.

2.3.1. Interpretive report of management in Iran

The interpretive management report is a suitable solution to increase the disclosure of relevant information in the market (Taherinia and Darbandi Farahani, 2022). Accountability of companies to social, economic, and environmental stakeholders is a vital issue studied from different approaches. Management interpretive report including requirements for disclosure of the nature of the business in the interpretive report; Requirements for disclosure of management goals and management strategies to achieve those goals in the interpretive report; Disclosure requirements of the most important sources, risks, and relationships in the interpretive report; The requirements for disclosing the results of operations and perspectives in the interpretive report and the requirements for disclosing the most critical performance criteria for performance evaluation in comparison with the goals in the interpretive report (Zhaleh-Azad Zanjani b, 2019).

2.3.2. Global Reporting Initiative (GRI)

The Global Reporting Initiative (GRI) aims to empower decision-makers everywhere to take action for a more sustainable economy and world through SR standards and its multi-stakeholder network. More than 100 countries consult GRI on corporate impact on critical sustainability issues. The GRI SR standard reveals each company's positive and negative impacts on the environment, society, and economy. GRI standards are designed to apply to all types of companies worldwide. Instead of focusing on how external factors affect companies, the GRI standard focuses on how a company's actions affect society. A practical framework that reports to investors and a more comprehensive range of stakeholders. The Global Sustainability Standards Board publishes the GRI standards in the following four sections: Public Sector Standards (GRI 100), economic sector standards (GRI 200), environmental sector standards (GRI 300), and social sector standards (GRI 400) (Jale-Azad Zanjani, 2018a and Zhaleh-Azad Zanjani, 2018b):

Table 3. Summary of key performance measures under each subject standard along with year of publication

Key criteria	Code	Standard type	Key criteria	Code	Standard type	Key criteria	Code	Standard type
Economic performance	1-201	Economic	Raw material	1-301	environmental	employment	1-401	social

Presence in the market	1-202	Economic	Energy	1-302	environmental	Employee and employer relations	1-402	social
Indirect economic effects	1-203	Economic	water and sewage	1-303	environmental	Occupational safety and health	1-403	social
Purchase procedure	1-204	Economic	biological diversity	1-304	environmental	Education and training	1-404	social
anti-corruption	1-205	Economic	Gas emissions	1-305	environmental	Diversity and equal opportunities	1-405	social
Anti-competitive behavior	1-206	Economic	wastage	1-306	environmental	Nondiscrimination	1-406	social
tax	1-207	Economic	Compliance with biological laws and regulations	1-307	environmental	Freedom of association and collective bargaining	1-407	social
	-		Bio-evaluation of suppliers	1-308	environmental	Working Children	1-408	social

2.3.3 American Sustainability Accounting Standards Board (SASB)

With an emphasis on social and environmental actions, SSE has integrated its standards into the particular form of supplementary corporate information Q10 and K10, which must be provided by companies admitted to the United States Securities and Exchange Commission. In this sense, it is different from initiatives like GRI by working in the current system of financial regulations and providing an independent report. To eliminate the need for industry-specific reporting standards, for the ease of comparison and the standard of doing this work, SASB has designed a sustainable industry classification system and an independent theoretical framework that includes ten sectors and 80 industries. The dimensions of sustainability used in the development of American SR standards are as follows (SASB, 2023):

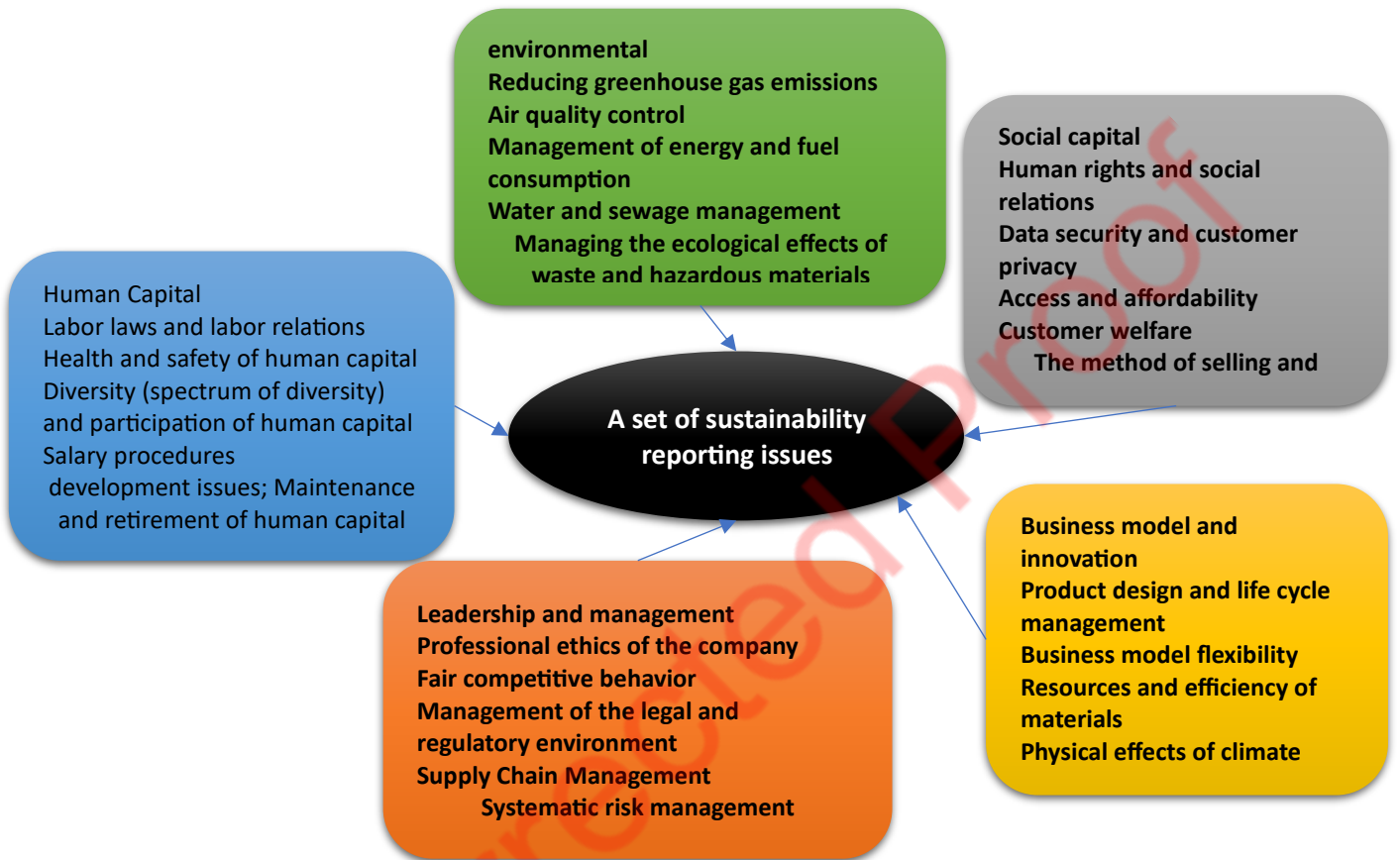


Figure 1. Dimensions of sustainability used in the development of American sustainability reporting standards (source: SASB, 2023)

2.4 The concept of capital market

"Financial markets" are among the most influential markets in the economies of "countries with large economies." The recession and boom of the stock market affect the national and world economies. Therefore, there is a significant relationship between stock market developments and economic stagnation and prosperity, and in turn, macro policies in any country primarily affect the macroeconomic variables and especially the monetary variables of the stock market of that country; interactions between markets have been discussed and investigated by financial experts for a long time. have been. Forecasting the stock market is very complicated because there is no

proper and specific rule for estimating or predicting the stock price in the stock market (Bazari Jagarh, 2022). On the other hand, considering the current conditions of the country and the intensification of sanctions, the need to strengthen the domestic economy is felt even more. In other words, the stock market is the financial infrastructure of commercial, industrial, government, and private activities, and economists refer to it as the engine of economic development that provides long-term financial resources. In such a way, creating markets such as the stock exchange, over-the-counter market, and commodity exchanges creates the context for the optimal allocation of funds to plans, projects, and capital assets (documents of the Stock Exchange website, 2023).

2.5 Research background

In the following, based on the standard arrangement based on the year of publication, the most relevant studies in the internal background of research until 2023 and the external background of research until 2023 are presented:

Table 4. Summary of existing studies in domestic and foreign background

The domestic background of the research	Foreign background of the research
Fathi's research (2023) investigates the most important economic consequences of audit quality by considering the quality of financial reporting.	In Erlandsson et al.'s (2023) research, the SR framework of ICT companies was created based on planetary boundaries.
The purpose of Hajiha and Chenari's research (2023) is to investigate the impact of the comparability of financial statements on the quality of financial reporting with an emphasis on audit quality.	In Asogwa's research (2023), the evaluation of SR acceptance criteria by non-governmental organizations (NGOs) based on the agenda for sustainability policies was discussed.
Rahmani et al.'s research (2022) investigated SR standards in the global insurance industry, their comparative comparison, and the status of publishing SR by insurance companies worldwide.	In the research of Alawattage et al. (2023), the political discourse model of sustainability accounting was designed based on moral economy and executive materialism.
The research of Nakhai et al. (2022) was conducted to investigate the relationship between SR , social responsibility reporting (CSR) and environmental reporting.	In the research of Al-Shaer and Hussainey (2022), SR beyond the business case and its impact on sustainability performance were investigated based on evidence from British companies.

Taherinia and Darbandi Farahani's (2022) research investigated the bilateral relationship between the simultaneous disclosure of the interpretive report and management profit forecast on information symmetry and investment quality with the role of adjusting the representation of environmental uncertainty in companies listed on the Tehran Stock Exchange.

The research of Esmailzadeh et al. (2021) aimed to identify, extract, refine, prioritize and analyze social factors and corporate characteristics that effectively impact the SR of pharmaceutical companies in Iran.

Taghavi Godarzi and Fazilat's research (2021), while explaining the challenges of public sector accountants in reporting sustainability and environmental changes, presented some new theoretical foundations in this field.

Mir Zamani et al.'s (2019) research attempted to identify the influencing factors on SR in Iran's oil industry by using the qualitative content analysis method and relying on institutional theory.

A 2021 review examines the environmental consequences of economic recovery after COVID-19 by Chu et al.

According to Narula et al. (2021), the application of Industry 4.0 technologies was evaluated in the adoption of the Global Reporting Initiative (GRI) standards to achieve sustainability.

In the research of Papoutsi and Sodhi (2020), a model was presented to investigate the role of financial disclosure in sustainability reports on the actual performance of sustainability.

In the research of Rosati and Faria (2019), sustainable development goals were investigated in sustainability reports based on the theory of the company's institutional factors.

2.6 Research model

Finally, after examining and reviewing the theoretical foundations and background of the research, it was determined that due to the existence of research gaps in the field of identification, Prioritization, and modeling of business model requirements and innovation in SR, leadership and management requirements in SR, stakeholder performance of management interpretive report, environmental requirements of SR, social capital requirements of SR, human capital requirements of SR, in Tehran Stock Exchange; And also due to the lack of a model to provide recommendations to the manager to decide on the qualitative model of SR in the Iranian capital market, it is possible to realize the innovation of conducting the present research in solving the research above gaps. The primary framework of the research specifies the relationship between the variables and the manner of this relationship for the qualitative model of SR in the Iranian capital market:

Table 5. Research model variables

Variable title	Variable measurement metrics	Reference
----------------	------------------------------	-----------

Environmental requirements for SR	Reducing greenhouse gas emissions	Erlandsson et al. (2023);
	Air quality control	Asogwa (2023); Al-Shaer and
	Management of energy and fuel consumption	Hussainey (2022); Narula et
	Water and sewage management	al. (2021); Rosati and Faria
	Managing the ecological effects of waste and hazardous materials	(2019); Alawattage, et al. (2023); GRI (2023); SASB (2023); CDSB (2023)
Social capital requirements of SR	Human rights and social relations	Alawattage, et al. (2023);
	Data security and customer privacy	Rosati and Faria (2019); Al-
	Access and affordability	Shaer and Hussainey (2022);
	Customer welfare	GRI (2022); SASB (2023);
	The method of selling and labeling the product	IIRC(2023)
Human capital requirements of SR	Labor laws and labor relations	Erlandsson et al. (2023);
	Health and safety of human capital	Papoutsis and Sodhi (2020);
	Diversity (spectrum of diversity) and participation of human capital	Palea (2018); Asogwa (2023);
	Salary procedures	GRI (2023); SASB (2023);
	development issues; Maintenance and retirement of human capital	IIRC (2023); IFRS (2023)
Business model requirements and innovation in SR	Product design and life cycle management	Narula et al. (2021); Nwobu
	Business model flexibility	(2017); Del Mar Alonso-
	Resources and efficiency of materials	Almeida et al. (2014) ; Al-
	Physical effects of climate change	Shaer and Hussainey (2022) ;
	Product quality and safety	GRI (2023); SASB (2023); IIRC (2023); VRF (2023)
Leadership requirements in SR	Professional ethics of the company	Aljajawy, et al. (2022);
	Fair competitive behavior	Papoutsis and Sodhi (2020);
	Management of the legal and regulatory environment	Cho, et al. (2022); Rydell and
	Supply Chain Management	Kristoffersson (2017); GRI,
	Systematic risk management	(2023); SASB (2023); IIRC (2023)
Stakeholder performance management interpretive report	Beneficiaries disclosure of the nature of the business	Tehran Stock Exchange and
	Stakeholders Disclosure of management goals and management strategies to achieve those goals	Management's Interpretive
	Stakeholders disclosure of the most important resources, risks and relationships	Report Rules)

Stakeholders' disclosure of results of operations and prospects
Stakeholders Disclosure of the most important performance measures to evaluate performance against objectives

According to the investigations carried out in the Scopus, ScienceDirect, Springer, Iran Doc, Islamic World reference database, and also the studies in the top universities of the country, this method is presented as a guideline to provide a qualitative model of the reporting requirements of the company's sustainability in the Iranian capital market with inspiration, from the standards of the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) using the MAXQDA qualitative analysis environment. It can help the Tehran Stock Exchange as a new and efficient way to improve managers' decision-making, Iran's capital market, accounting professors and students, auditing, financial management, and economic development.

3. Research methodology

The research method in this article is a qualitative type of content analysis to provide a qualitative model of the company's SR requirements in the Iranian capital market, inspired by the standards of the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB). The library method will collect the data required for this research. This way, the theoretical foundations of the research and background will be extracted by referring to books, articles, and other available sources. To use the library method in examining the requirements of Iran's management interpretive reports with common SR standards in the world, we perform the following steps:

Checking keywords and research terms

Collecting articles and studies related to the topic of fake news

Memorizing information related to the research problem and research variables

Analysis of information related to the mentioned variables

In other words, the studied population of this research can be divided into three general groups in the quantitative part: the first group includes professors who have an opinion on the field under investigation; The second group includes professionals working in the Tehran Stock Exchange, and the third group comprises professional investors and independent researchers (public

stakeholders). This research's sampling method combines non-probability targeted (judgmental) and snowball sampling. The case study in this research is the capital market of Iran.

In the continuation of the research, action is taken after considering the strategic nature of the qualitative SR model in the Iranian capital market, analyzing the aforementioned factors, and using the MAXQDA qualitative analysis environment. The data analysis tool of the previous research for the qualitative SR model in the Iranian capital market is MAXQDA software for analyzing qualitative data obtained from expert interviews (determining research variables and criteria). Analysis of research data based on the qualitative method of content analysis to identify and extract the main dimensions, components, and metrics of SR in the stock market industry and the identification of stakeholders with the importance of the stock market industry will be done because content analysis is a qualitative research method to identify, analyze and interpret the semantic patterns of qualitative data. According to the research objectives, content analysis may have different standards or flexibility, but usually, the stages of content analysis research projects include the following steps (Mazidi and Dastori, 2021):

- Preparing data
- Description of the unit of analysis
- Development of classes and coding scheme
- Drawing the results of coded data
- Report of methods and findings.

4. Data analysis

The stages of data analysis based on the qualitative method of content analysis, using Maxqda software to analyze the qualitative data obtained from the interviews with experts (determining research variables and criteria) are:

4.1 Data preparation

In this research, the statistical population of the qualitative section includes companies admitted to the Tehran Stock Exchange in four industry groups: food industry (10 companies), medicine (14 companies), automobile (26 companies), and petrochemicals (25 companies), which are among the major groups. The industries of the companies listed in the Tehran Stock Exchange are in the time domain of March 29, 2021. The community of the qualitative part of this research to measure

the readiness of companies for SR in Iran, with the theoretical ghost method, includes 15 experts from the Tehran Stock Exchange. In the following, the relative frequency of compliance with the SR requirements of Iran's capital market is presented based on the data measuring companies' readiness for SR in Iran:

Table 6. The relative frequency of compliance with sustainability reporting requirements based on the data measuring companies' readiness for sustainability reporting in Iran

Readiness measurement criteria	Pharmaceutical Industry			Car Industry			Food Industry			Petrochemical Industry		
	N.N.C*	N.C**	S.N***	N.N.C*	N.C**	S.N***	N.N.C*	N.C**	S.N***	N.N.C*	N.C**	S.N***
Economic GRI 200	49	189	238	85	357	442	16	154	170	186	239	425
Environmental GRI 300	274	174	448	566	266	832	170	150	320	508	292	800
Social GRI 400	65	467	532	286	702	988	108	272	380	441	509	950
total	402	844	1232	948	2848	3796	308	1152	1460	1160	2490	3650
Relative frequency of non-compliance	33%			25%			21%			32%		
Relative frequency of compliance	67%			75%			79%			68%		
* No. of non-compliance(N.N.C) ** No. of compliance (N.C) *** Sample no.(S.N)												

Based on the analysis of the relative frequency of compliance with the SR requirements of the Tehran Stock Exchange, it was determined that food and automobile companies with a compliance ratio of 79 and 75% have a better situation than pharmaceutical and petrochemical companies with a compliance ratio of 67 and 68%. In fact, in the three sectors of GRI, i.e., economic sector - environmental sector - social sector, out of a sample of 3796 in automotive companies, 2848 cases comply with SR requirements (economic sector 81% - environmental sector 32% - social sector 71%) and In a sample of 1460 food companies, 1152 cases of compliance with SR requirements were reported (economic sector 91% - environmental sector 47% - social sector 72%). While, out

of a sample of 1232 in pharmaceutical companies, 844 cases of compliance with SR requirements (economic sector 79% - environmental sector 39% - social sector 88%) and out of a sample of 3650 in petrochemical companies, 2490 cases of compliance with SR requirements (Economic sector 56% - environmental sector 37% - social sector 54%) is reported. Listed companies in the food, automotive, pharmaceutical, and petrochemical sectors pay little attention to the environmental sector of SR because the compliance ratio is less than 50%, while the highest compliance ratio is in the environmental sector.

4.2 Description of the unit of analysis

The analysis unit in the content analysis of this research is specifically related to the meaning and production of content. It conveys the qualitative model of SR in the Iranian capital market. To determine and finalize the criteria by implementing the qualitative part of the research, the opinions of 15 financial and investment experts working in the Tehran Stock Exchange, Iran's capital market, as well as academic experts in accounting fields, auditing; financial management and economic development; Financial and investment experts who are experts in the field of research were gathered in the form of structured interviews between the winter of 2022 and the spring of 2023. The demographics of the qualitative part of the research show that the experts have the "experience (relevant work experience) and knowledge (relevant educational qualification)" necessary to participate in the research. In the stage of word selection for the analysis unit in the content analysis of this research, the main concepts of the qualitative model of SR in Iran's capital market have been extracted from the implementation of qualitative methodology in the study in the form of variables and criteria emphasized by experts. Here are some of the outputs of the structured interviews with the experts:

Table 7. Extraction of concepts based on research analysis unit

Leadership and governance requirements in SR	Environmental requirements for SR
Stakeholder performance management interpretive report	Social capital requirements of SR
Economic imperatives of business model and innovation in SR	Human capital requirements of SR

The extraction of concepts based on the research analysis unit shows that the environmental requirements of SR , social capital requirements of SR , Leadership and governance requirements

in SR , Economic requirements of business model and innovation in SR ; The human capital requirements of SR and the performance of the stakeholders of the management interpretive report are the main concepts of the qualitative model of SR in the Iranian capital market.

4.3 Development of classes and coding scheme

To develop the categories and coding scheme in this research, six categories were extracted, which are: environmental requirements of SR; social capital requirements of SR ; Leadership and governance requirements in SR ; Economic requirements of business model and innovation in SR ; Human capital requirements of SR and stakeholder performance Interpretive reporting of management. In the following, we will provide details about the sub-components of an example of the development of classes and the coding plan action was taken:

Table 8. Sub-components of the environmental requirements dimension of SR

Sub-components of the environmental requirements dimension of sustainability reporting	Repetition in reports	Frequency in exchanges	Content analysis	Interview
Management of energy and fuel consumption	56	16	√	√
Environmental awareness for air quality control	44	14	√	√
Reducing greenhouse gas emissions	39	12	√	√
Water and sewage management	11	5	√	√
Managing the ecological effects of waste and hazardous materials	7	3	√	√

After analyzing the interviews related to the environmental requirements of SR , it was found that "management of energy and fuel consumption; environmental awareness to control air quality and reduce greenhouse gas emissions" has a higher frequency than "water and wastewater management and management of the ecological effects of waste materials and are dangerous" in the stability reports of stock exchanges and experts' opinions. Finally, after refining the raw data, the interview structure shows a relationship between the main concepts and their sub-components was established. Here, the distribution of the experts' responses in the segmentation of the research

content shows that for each of the six main variables in the qualitative model of SR in the Iranian capital market, three criteria have been extracted:

- The "Leadership and Governance Requirements in SR " component includes criteria such as the board of directors' policy for fair, competitive behavior; management of the legal and regulatory environment of the company; and systematic risk management.
- The "stakeholder performance of the management interpretive report" component includes stakeholder performance, disclosure of the most critical company performance criteria, stakeholder performance disclosure of operating results and prospects, and stakeholder performance disclosure of the essential resources, risks, and relationships.
- The "environmental requirements of sustainability reporting" component includes criteria such as reducing greenhouse gas emission energy and fuel consumption and environmental awareness for air quality control.
- The "social capital requirements of SR " component includes criteria such as human rights and social relations, data security, and customer privacy. The welfare of customers is based on the promotion of education.
- The "Economic requirements of business model and innovation in SR " component includes criteria such as quality and safety of various products and services, flexibility of the cost-based business model, Resource management, and economic efficiency of materials.
- The "human capital requirements of SR " component includes criteria such as labor laws and labor relations, health and safety of human capital, and appropriate payroll procedures for human capital.

Finally, to report methods and findings, the ranking of research codes based on their repetition in the coding matrix is as follows:

Table 9. Ranking of research codes based on frequency

Components	Concept	Code	No. of code frequency Source	Frequency percentage
Management and governance	A- The policy of the board of directors regarding fair competitive behavior	AA	5	%43

requirements in SR with code (A)	B- Managing the company's legal and regulatory environment	AB	12	%80
	C- Systematic risk management of the company	AC	8	%53
Stakeholders' Performance Management Interpretive Report Coded (B)	A- Stakeholders' performance Disclosure of the most important performance criteria of the company	BA	11	%73
	B- Stakeholders' performance in disclosing the results of operations and prospects	BB	5	%43
	C- The performance of the beneficiaries of the disclosure of the most important resources, risks and relationships	BC	8	%53
Environmental requirements for SR with code (C)	1- Reduction of greenhouse gas emissions	CA	8	%53
	2- Management of energy and fuel consumption	CB	9	%60
	3- Awareness of the environmental sector to control air quality	CC	8	%53
Social capital requirements for SR with code (D)	A- Human rights and social relations	DA	8	%53
	B-data security and customer privacy	DB	5	%43
	C- The welfare of customers based on the promotion of education	DC	10	%67
Economic requirements of business model and innovation in sustainability reporting with code (E)	1- Quality and safety of various products and services	EA	10	%67
	2-Flexibility of the business model based on costs	EB	11	%73
	3- Management of resources and economic efficiency of materials	EC	6	%40
Human capital requirements for SR with code (F)	A- Labor laws and labor relations	FA	7	%47
	B- Health and safety of human capital	FB	11	%73
	C- Appropriate salary procedures for human capital	FC	9	%60

	Code	All coded segments	Position
■	AB	12	2
■	BA	11	4
■	EB	11	14
■	FB	11	17
■	DC	10	12
■	EA	10	13
■	CB	9	8
■	FC	9	18
■	AC	8	3
■	BC	8	6
■	CA	8	7
■	CC	8	9
■	DA	8	10
■	FA	7	16
■	EC	6	15
■	AA	5	1
■	BB	5	5
■	DB	5	11

Figure 2. Criteria resulting from the qualitative analysis of the variables of the qualitative model of sustainability reporting

The most repeated criteria resulting from the qualitative analysis of the variables of the qualitative model of SR in the Iranian capital market are:

- Management of the legal and regulatory environment of the company with code (AB) has the most repetition in management and governance requirements in SR with code (A) with a frequency of 12 out of 15 experts.
- Health and safety of human capital with code (FB) has the most repetition in human capital requirements of SR with code (F) with a frequency of 11 out of 15 experts.
- Beneficiaries' performance Disclosure of the most critical performance criteria of the company with the code (BA) having the most repetition in the performance of the stakeholders of the management interpretive report with the code (B) with a frequency of 11 out of 15 experts.
- Cost-based business model flexibility with code (EB) has the most repetition in business model economic requirements and innovation in SR with code (E) with a frequency of 11 out of 15 experts.
- Customer welfare based on the promotion of education and training with the code (DC) has the most repetition in the social capital requirements of SR with the code (D) with a frequency of 10 out of 15 experts.

• Management of energy and fuel consumption with the code (CB) has the most repetition in the environmental requirements of SR with the code (C) with a frequency of 9 out of 15 experts. According to the above calculations, the qualitative model of SR in Iran's capital market is presented as follows:

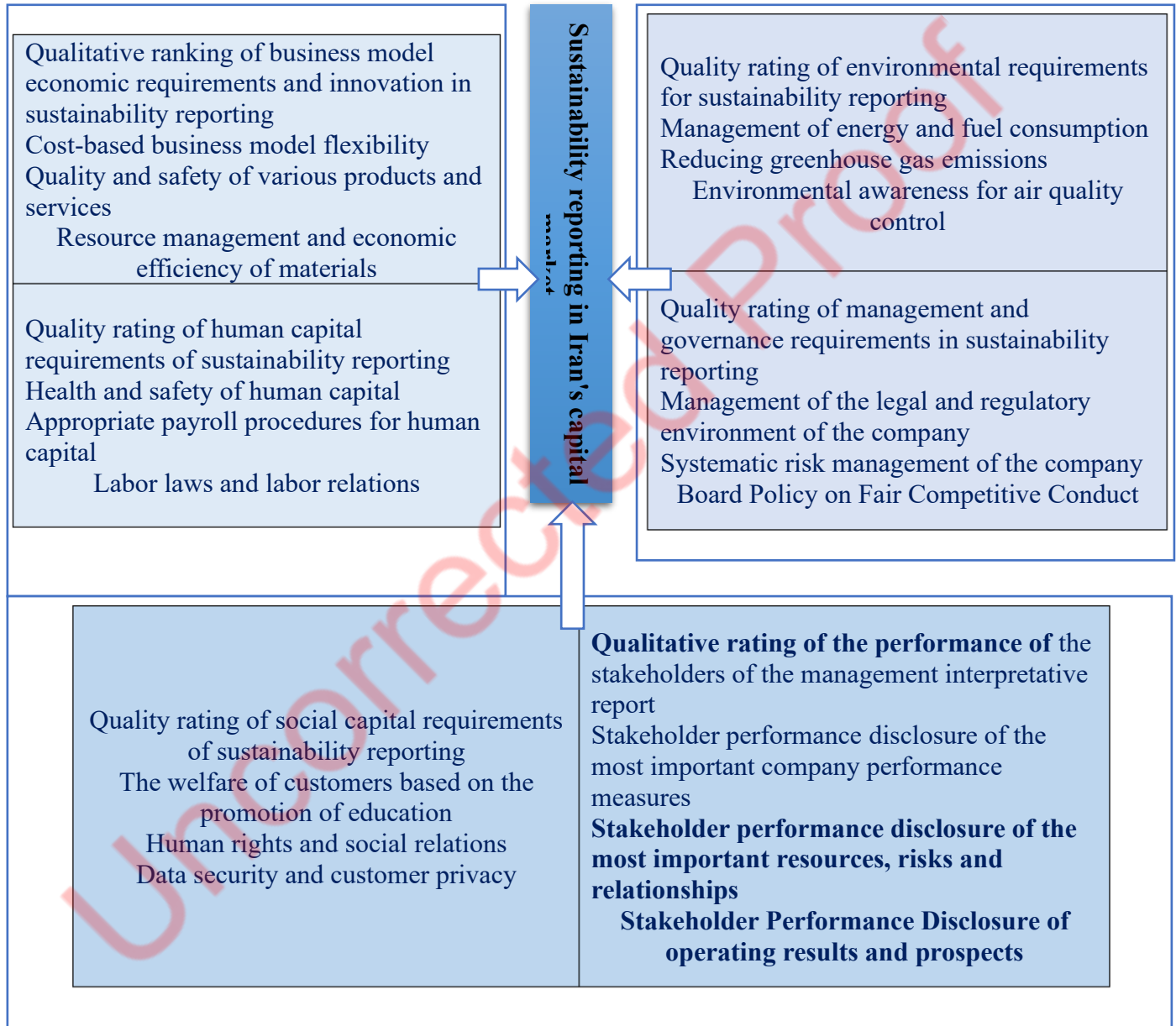


Figure 3. Qualitative model of SR in Iran's capital market

To check to what extent the measurement tool of this research measures the desired characteristic, scientific documents and corporate standards as well as some experts working in the Tehran Stock Exchange have been used and the variables of the initial decision-making model after applying their opinions using qualitative methodology, reached its final form. The research's conclusion was presented after finalizing the research model's variables and criteria.

5. Conclusion and Practical and future suggestions

5.1 Conclusion

The primary purpose of this research is to examine the requirements of the reports published in the Tehran Stock Exchange with the common SR standards in the world to provide an optimal SR model for the Iranian capital market. The study population of this research can be divided into three general groups for quantitative data analysis: the first group includes experts and professionals working in the Tehran Stock Exchange (industry experts), the second group includes professional investors and independent researchers (public stakeholders) and the third group includes professors—expert in accounting, auditing, financial management, and economic development (academic experts), categorized. Finally, after the distribution of 200 instruments, the sample size of this research is equal to 180 research experts who are available and willing to cooperate with a combination of two non-probability targeted sampling methods (judgmental) and snowball sampling. The data related to the localization tool of the research variables were collected between the winter of 2022 and the spring of 2023. This thesis's research method combines qualitative analysis methods in MAXQDA, Statistical analysis in SPSS, and multi-criteria decision-making in Expert Choice. In this regard, the most important result obtained from this research is that the qualitative model of SR in Iran's capital market includes the main variables such as: management and governance requirements in SR (the policy of the board of directors regarding fair competitive behavior; management of the legal and regulatory environment company; systematic risk management of the company); Stakeholder performance of management interpretive report (stakeholder performance disclosure of the most essential company performance measures; Stakeholder performance disclosure of operation results and prospects; Stakeholder performance disclosure of the most critical resources, risks and relationships); Environmental requirements for SR (reduction of greenhouse gas emissions; management of energy and fuel consumption; environmental awareness for air quality control); Social capital

requirements of SR (human rights and social relations; data security and customer privacy; customer welfare based on the promotion of education and training); Economic requirements of the business model and innovation in SR (quality and safety of diverse products and services; flexibility of the business model based on costs; resource management and economic efficiency of materials); Human capital requirements are SR (labor laws and labor relations; health and safety of human capital; appropriate salary and wage procedures for human capital).

5.2 Practical and future suggestions

From another point of view, based on the findings related to the environmental requirements of SR, i.e., reducing greenhouse gas emissions, management of energy and fuel consumption, Environmental awareness to control air quality, research proposals based on green supply chain management of products are:

- Paying attention to green production: In product manufacturing, there are several stages for green production, which include initial research and development, obtaining permission from the supervisory authority to sell the product in the market, and the final phase of commercialization.
- Sustainable distribution of the product to the point of supply: This stage includes the transportation and management of the production of goods from the producer to the final consumer, which can be a retail supplier or a customer. The complexity of this path varies according to the producer's location, the need to import, special requirements, and the location of the final consumer between the centers of big cities and remote villages.
- Supply to the final consumer: customization and providing the suitable form and size of products and services for customers according to a precise schedule is the final step in the value chain.

Based on the results of this research, the research suggestions based on the sustainability of the profitability of listed companies are attention to mandatory pricing in the industry, resiliency in dollar rate fluctuations, and reducing the effects of economic sanctions.

References

Alawattage, C., Jayathileka, C., Hitibandara, R. and Withanage, S. (2023). Moral economy, performative materialism, and political rhetorics of sustainability accounting. *Critical Perspectives on Accounting*, 95(1), A. 102507. <https://doi.org/10.1016/j.cpa.2022.102507>

- Alawattage, C., Jayathileka, C., Hitibandara, R. and Withanage, S. (2023). Moral economy, performative materialism, and political rhetorics of sustainability accounting. *Critical Perspectives on Accounting*, 95(1), A. 102507.
- Aljajawy, T. M., Dolab, Y. and Alkhfajy, E. J. (2022). The Role of Global Reporting Initiative (GRI) for Achieving SR . In International Conference on Business and Technology (pp. 867-884). Cham: Springer International Publishing. Springer, Cham. https://doi.org/10.1007/978-3-031-08954-1_73
- Al-Shaer, H. and Hussainey, K. (2022). Sustainability reporting beyond the business case and its impact on sustainability performance: UK evidence. *Journal of Environmental Management*, 311(61), A. 114883. <https://doi.org/10.1016/j.jenvman.2022.114883>
- Asogwa, I. E. (2023). Uptake of sustainability reporting adoption by non-governmental organizations: An agenda for policy and practice. *Journal of Cleaner Production*, 388(57), A. 135842. <https://doi.org/10.1016/j.jclepro.2022.135842>
- Cho, C. H., Senn, J. and Sobkowiak, M. (2022). Sustainability at stake during COVID-19: Exploring the role of accounting in addressing environmental crises. *Critical Perspectives on Accounting*, 82(3), A. 102327. <https://doi.org/10.1016/j.cpa.2021.102327>
- Del Mar Alonso-Almeida, M., Llach, J. and Marimon, F. (2014). A closer look at the ‘Global Reporting Initiative’ sustainability reporting as a tool to implement environmental and social policies: A worldwide sector analysis. *Corporate Social Responsibility and Environmental Management*, 21(6), pp. 318-335. <https://doi.org/10.1002/csr.1318>
- Erlandsson, J., Bergmark, P. and Höjer, M. (2023). Establishing the planetary boundaries framework in the sustainability reporting of ICT companies—A proposal for proxy indicators. *Journal of Environmental Management*, 329(81), 117032. <https://doi.org/10.1016/j.jenvman.2022.117032>
- Kücükgül, E., Cerin, P. and Liu, Y. (2022). Enhancing the value of corporate sustainability: An approach for aligning multiple SDGs guides on reporting. *Journal of Cleaner Production*, 333(2), 130005. <https://doi.org/10.1016/j.jclepro.2021.130005>
- Michalak, J., Staszkiwicz, P. and Waniak-Michalak, H. (2023). Is academic recommendation translated into the European Union corporate sustainability reporting directive proposal. *Journal of Cleaner Production*, 412, A. 137186. <https://doi.org/10.1016/j.jclepro.2023.137186>

- Narula, S., Puppala, H., Kumar, A., Frederico, G. F., Dwivedy, M., Prakash, S. and Talwar, V. (2021). Applicability of industry 4.0 technologies in the adoption of global reporting initiative standards for achieving sustainability. *Journal of Cleaner Production*, 305(18), A. 127141. <https://doi.org/10.1016/j.jclepro.2021.127141>
- Nwobu, O. A. (2017). Determinants of corporate sustainability reporting in selected companies in Nigeria. *Covenant University Repository*, 9(1), pp. 1-287.
- Palea, V. (2018). Financial reporting for sustainable development: Critical insights into IFRS implementation in the European Union. In *Accounting Forum*, 42(3), pp. 248-260. <https://doi.org/10.1016/j.accfor.2018.08.001>
- Papoutsis, A. and Sodhi, M. S. (2020). Does disclosure in sustainability reports indicate actual sustainability performance?. *Journal of Cleaner Production*, 260(67), A. 121049. <https://doi.org/10.1016/j.jclepro.2020.121049>
- Parfitt, C. (2022). A foundation for 'ethical capital': The Sustainability Accounting Standards Board and Integrated Reporting. *Critical Perspectives on Accounting*, 1(1), A. 102477. <https://doi.org/10.1016/j.cpa.2022.102477>
- Rosati, F. and Faria, L. G. (2019). Addressing the SDGs in sustainability reports: The relationship with institutional factors. *Journal of cleaner production*, 215(11), pp. 1312-1326. <https://doi.org/10.1016/j.jclepro.2018.12.107>
- Rydell, J. and Kristoffersson, E. (2017). Sustainability Report Development in Accordance with the GRI Guidelines: Insights from Swedish and Finnish Forestry Companies. Working paper, Umeå, Sweden
- Esmailzadeh, Gudari, Hassan, Jabari, and Arabzadeh. (2021). Identifying factors affecting the sustainability reporting of pharmaceutical companies: the combined use of multi-criteria decision-making methods and Delphi. *Journal of Management Strategies in Health System*, 6(3), pp. 233-247. (In Persian). <http://dx.doi.org/10.18502/mshsj.v6i3.8038>
- Bazari Jagargh, A. (1401). *Book of accounting in the stock exchange: a look at the relationship between the audit report and the exit of companies from the stock exchange*. Line and Nai, Tehran Iran. (In Persian).
- Taghavi Godarzi, M and, Fazilat, F. (2021). Sustainability and environmental change reporting challenges for public sector accountants. *Public sector accounting and budgeting*, 5(2), pp. 66-71. (In Persian).

- Hajiha, Z. and Chenari. H. (2023). The effect of comparability of accounting on the quality of financial reporting with an emphasis on audit quality. *Judgment and decision making in accounting and auditing*, 2(5), pp. 87-106. (In Persian). <http://dx.doi.org/10.30495/JDAA.2023.699869>
- Rahmani, Mahmoudkhani, Homayun, Niakan, and Lili. (2022). Examining the standards, guidelines and publication status of sustainability reporting in the insurance industry. *Insurance Journal*, 11(2), pp. 159-174. (In Persian).
- Bellandi, Francesco (2017). *Materiality in Financial Reporting: An Integrative Perspective: For Compilers of Financial Reporting Standards and Accounting PhD Students*. Terme publications. Tehran, Iran. (In Persian).
- Principles of the United Nations Global Compact* (UNGC, 2015), *Corporate Sustainability Guide, Building a Sustainable Future*, Tehran: Termeh, Iran. (In Persian).
- Zhaleh-Azad Zanjani¹, Mohsen, (2018a). *Set of integrated sustainability reporting standards 2018* (Environmental Department of GRI 300 Group), Tehran: Termeh, Iran. (In Persian).
- Zhaleh-Azad Zanjani, M, (2018b). *Set of integrated sustainability reporting standards 2018* (General and Economic Department of GRI Group 100 and 200), Tehran: Terme, Iran. (In Persian).
- Taherinia, M. and Darbandi Farahani. S. (2022). Examining the mutual relationship between the simultaneous disclosure of interpretive report and management profit forecast with informational symmetry and investment quality with environmental uncertainty moderation. *Accounting and Social Interests*, 12(2), pp. 55-88. (In Persian). <https://doi.org/10.22051/jaasci.2022.37574.1639>
- Fathi, V. (2023). Economic consequences of audit quality considering the quality of financial reporting of companies, *Contemporary Research Quarterly in Management and Accounting Sciences*, 5(16), pp. 1-22. (In Persian).
- Mir Zamani, A., Amiri, A.N., Hamidizadeh, A. and Rezagholizadeh, E. (2019). Identifying institutional factors affecting sustainability reporting in Iran's oil industry. *Organizational Culture Management*, 18(4), pp. 703-721. (In Persian). <https://doi.org/10.22059/jomc.2020.294374.1007955>
- Nakhai, K., Barzegar, G., Moradipour, R. and Askarzadeh, M. (2022). Sustainability reporting, social responsibility reporting (CSR) and environmental reporting, *First national conference on innovation in management, accounting and economics research*, Mashhad, Iran. (In Persian).

Mazidi, M. and Dastori, N. (2021). *An introductory book on qualitative research: a philosophical and practical guide*. Measurement and knowledge. Tehran, Iran. (In Persian).

Abdi, Mostafa, Et al. (2019). Designing of Corporates' Coherent Sustainability Reporting Model, 10.22108/FAR.2019.118585.1498.

Uncorrected Proof