BIBLIOMETRIC ANALYSIS OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE IN FINANCE

Steliana Mocanu[1], Ionuț Laurențiu Petre[2], Marilena Potârniche (Berheci)[3], Cristian Stana[4]
[1)2)3)4)] The Bucharest University of Economic Studies, Bucharest, Romania

Abstract
In the last years, when it comes to invest, the investors take into consideration in addition to the company's financial report, the non-financial report. Environmental, social, and governance (ESG) factors present an increasing interest year by year as it was identified through the present research. The main objective of this paper is to determine the interest of ESG factors in finance. The research method consists in conducting a bibliometric analysis querying the existing documents in the "Web of Science Core Collection" (WoS) database. The query revealed a number of 477 scientific documents that were carried out between 2008 and 2024 that contain both terms "ESG" and "finance" in title, abstract or keywords. The query was made on April 01, 2024 and the results were processed through VOSviewer software. Main findings of the research are that the most documents (31.24%) were included in the Business Finance category of the Web of Science database and that the research confirm the increase of the scientific interest about ESG and finance, year by year. The countries most interested in writing about ESG and finance are China, with 21% of documents, USA (13% of documents) and United Kingdom (12% of documents). In conclusion, in the context of the low number of documents written on this subject (according to WoS database), this paper adds an important status of the authors' interest in ESG in finance.

Keywords
ESG, finance, bibliometric analysis, Web of Science

JEL Classification
B26, F65, G32

Introduction

Climate change and environmental protection are subjects more and more common in our world, taking in account that in the last more than 50 years, the negative impacts of

[1] Corresponding author, **Mocanu Steliana** – mocanusteliana18@stud.ase.ro.

the climate change and the natural factors influenced the number of negative effects like: droughts, floods, earthquakes, landslides etc. (figure no. 1).
According to the negative impacts that started to be visible, the concerns about the environment started with the year 1972, when the First Earth Summit took place. (Redondo Alamillos and de Mariz, 2022)

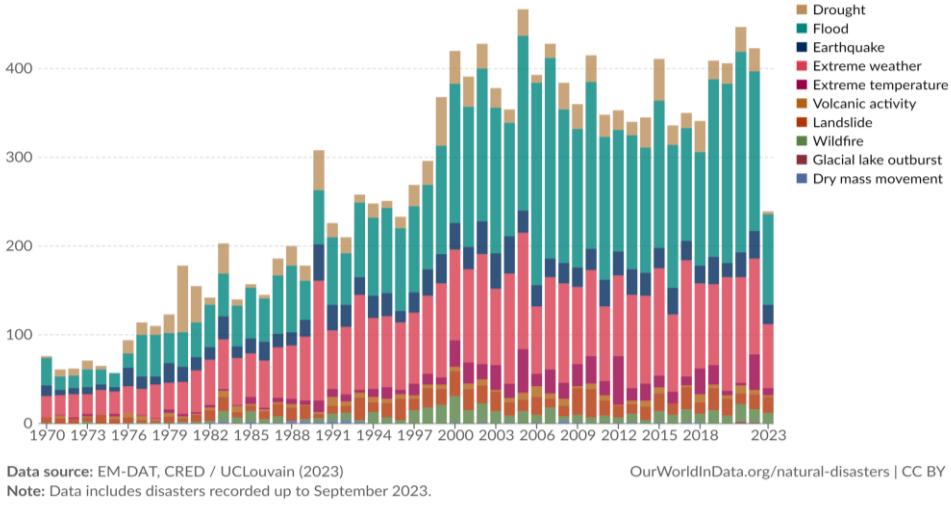

Figure 1. Global Reported Natural Disasters by Type, 1970 to 2023
Source: Our World in Data

ESG (environmental, social and governance) definition can be resumed at the set of factors that are used "to measure the non-financial impacts of particular investments and companies", and to "provide a range of business and investment opportunities" (Bergman et al., 2020). According to Du et al., (2023), ESG serve as vital indicators for measuring the green management concept of enterprises and promoting high-quality economic growth, and enhancing their capacity for sustainable development.

Table no. 1 ESG framework (international frameworks)

ESG element	Groups of factors
Environmental (E)	• Consumption of materials, energy and water • Energy consumption and efficiency • Impact and dependence on biodiversity
Social (S)	• Workplace health and safety • Poverty and community impact • Customer privacy
Governance (G)	• Transparency and disclosure • Bribery and corruption • Codes of conduct and business principles

Source: Author's elaboration base on the EBA report on ESG risk management and supervision (EBA report on ESG risk management and supervision, 2023)

Following the Table no. 1 from above, the factors that are part of ESG (environmental, social, governance) concept are referring at:

- Environmental factors: pollution, greenhouse gas emissions, climate mitigation, carbon footprints, adaptation to climate changes, biodiversity protection, sustainable use and protection of water and maritime resources, transition to a circular economy, waste avoidance and recycling, deforestation, healthy ecosystems protection, biodiversity, sustainable use of lands" etc. (Barangă & Țanea, 2022; Bergman et al., 2020)
- Social factors: labour standards, entity's relationship with its employees, clients and other stakeholders, wages and benefits, safety and health at work, adequate remuneration, equitable work conditions, pay equity, human rights, diversity and developing opportunities, health and safety, trade union rights etc. (Barangă & Țanea, 2022; Bergman et al., 2020)
- Governance factors: fiscal honesty, executive compensation, anticorruption measures, sustainability management, remuneration of the Board of directors, data protection guarantee, political contributions, information disclosure etc. (Barangă & Țanea, 2022; Bergman et al., 2020)

Regarding the concept of finance, we chose this one due to the close relation between the non financial reporting, and the finance. Numerous authors (Liang & Yang, 2024; Mo et al., 2023; Mu et al., 2023, Chang et al., 2023; Xue et al., 2023; Qian and Yu, 2024) have already written papers about green finance or digital finance and ESG. So, in our research we considered all of the paper that cover topics related to finance, especially green and digital finance.

Digital finance are an important topic in a company, beeing in a close relationship with ESG. Digital finance can reduce the disproportion between firms and outside and can encourage firms to engage in activities related to ESG (Mu et al., 2023). In their paper, Mu et al., 2023 mentioned that digital finance can positively affect corporate ESG in China. The corporate financing can be improved using a corporative strategy based on a strength link between digital finance and ESG (Chang et al., 2023).

Green finance reffers to the activities that support the enviromnet on an economic way and can help the bussines which want to develop project to save the environment (Madaleno et al., 2022). Green finance can also enhance the engaging in activities related to ESG, apparing with the the increasing of prioritizing the ecological topicsa by the financial institutions (Liang & Yang, 2024).

The main objective of this research is to provide a bibliometric examination of the literature related to ESG studies in the field of finance.

Regarding the link between ESG and finance, some authors wrote about the involvement of ESG in investing management. According to Park and Lee (2023), the management of ESG show the "optimal way to allocate resources to both financial and social values in order to enhance stakeholder utility"

The motivation of writing the present paper came from the importance of the subject and from the gap identified in the literature review. In other bibliometric studies related to ESG the authors (Senadheera et al., 2022; Au et al., 2023, Yadav and Saini, 2023) presented the bibliometric analysis about ESG, but not about the ESG in a direct connection with finance.

The paper is organised as follows. We started with the general information about ESG and with the literature review about ESG and their corelation with finance, continuing with the bibliometric analysis. Using the WoS database' query, we presented the authors interests regarding ESG in finance by: outline of the evolution of the number of scientific papers related to ESG and finance wrote by year, framing of the scientific papers according to the type of the document, according to WoS classification and according their author's country.

1. Review of the scientific literature

In recent years, sustainability, responsibility and impact investing gained significant importance within mainstream investment strategies (Pay and Yu, 2023). Before to speak about the of ESG (environmental, social and governance) these concerns, were namely "non-financial information" (NFI). From the keyword research elaborated by Fometescu and Hațegan (2023) resulted that "the non-financial reporting articles frequently discuss the following ideas: CSR, cost, governance, risk, valuation, performance, corporate governance, decisions, liquidity, indicators, impact, Sustainability reporting, and Environmental disclosures, of which non-financial information is the most important."

ESG reporting disclose environmental, social, and governance data aimed at enhancing transparency for investors. Its goal is to identify companies committed to addressing climate change by taking concrete actions and avoiding deceptive greenwashing practices. (Barangă & Țanea, 2022; Gigante et al., 2023)

ESG investments have developed to the point where they can shape the future, increasingly incorporate ESG data into their deliberation processes (Hao and Dragomir, 2023). The quality of these data (non-financial information) must be of high quality, reliable and comparable, to support investors' decisions (Hao and Dragomir, 2023).

ESG reporting is of interest to investors because all investors plausibly care about the potential cash flow benefits of ESG-related efforts (Friedman et al., 2021). Some authors (Pay & Yu, 2023; Wong et al., 2021) concluded in their study that that companies that conduct ESG practices increase the value of the company and its image in front of investors.

In their research, Ilhan et al. (2023) conducted a survey among 439 participants worldwide. The findings revealed that 79% of respondents consider climate risk reporting to be equally vital as financial reporting, with nearly one-third regarding it as even more crucial. Moreover, they emphasized the significance of strong investor demand for such disclosures and active engagement with portfolio companies to enhance them.

The main datasets dedicated to ESG are: "Eiris, MSCI, Refinitiv, S&P Global, Sustainalytics, Bloomberg, FTSE Russell, Institutional Shareholder Service (ISS), RepRisk etc." (Pay and Yu, 2023)

Regarding the legislation, the most important regulations for companies headquartered in the EU are the following:

- Large companies with over 500 employees had to report non-financial information, including ESG factors, in accordance with 2014/95/EU Directive.

- the EU issued Directive (EU) 2022/2464 mention that all large companies, regardless of legal structure, must report on sustainability factors.
- listed SMEs obligated to issue sustainability statements from 2026; (Hao and Dragomir, 2023)
- "In Hong Kong, ESG reports have been obligatory for all listed companies since 2020". (Green Central Banking, 2024)

2. Research methodology

In this paper we intended to bring an updated bibliometric about the ESG in finance sector. In the present paper, a bibliometric analysis was conducting, taking into consideration that this method of research emerged in the 1960′s and "is one of the few subfields concerned with measuring the output side of science." (Godin, 2006)

In order to identify the scientific interest of authors about ESG factors in finance, the bibliometric analysis was performed using the information obtained by querying the Web of Science database. On this purpose, the search criteria were: "Topic" (Title, Keywords, Abstract"), and the search terms were: "ESG" AND "finance". The search was carried out in April 2024 and a total of 477 scientific documents were identified.

The VOSviewer software version 1.6.19 was used in the research, to perform mapping analysis about correlations between keywords and correlations between author's countries of the 477 scientific papers identified. The VOSviewer software were created by Nees Jan van Eck and Ludo Waltman and is a program that allow the construction and visualisation of bibliometric maps in an easy-to-interpret way. (Van and Waltman, 2010)

3. Results and discussion

The Web of Science (WoS) database query revealed a number of 477 scientific papers in the topic (title, abstract or keywords) of which both terms "ESG" and "finance" were present. The total of 477 scientific documents were carried out in the period 2010-2024 (with year 2024 still in its infancy). The highest count of papers (422 papers, are articles), being followed by 35 review articles, 53 early access, 5 book chapters, 1 data paper, 7 editorial material, 13 proceeding papers and 1 letter, conform with the WoS classification.

Regarding the year of publication, as can be seen in figure no. 2, the number of scientific papers increased from year to year in the analysed period. The number of articles writing on field of ESG in finance increased especially starting with 2018, for years after the 2014/95/EU Directive. The highest number of scientific papers were published in 2023, which means 35.6% from all of the articles that contain the terms "ESG" and "finance" published in Web of Science database, with 35% more than in 2022.

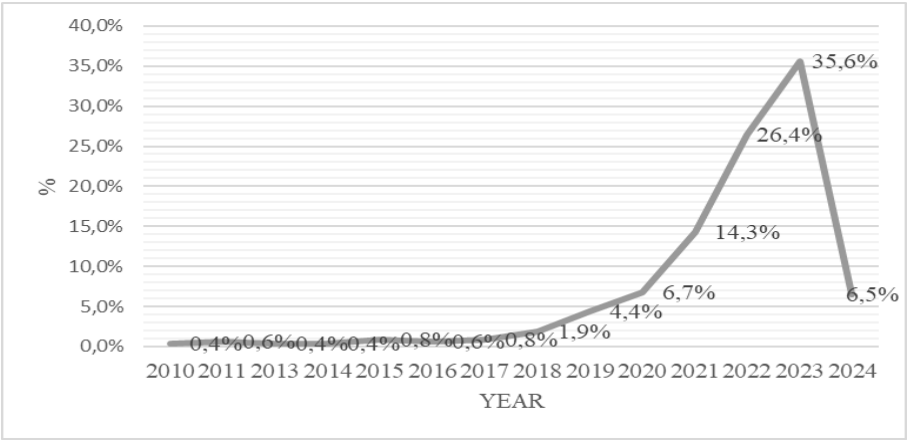

Figure no. 2. Number of scientific papers containing the terms "ESG" and "finance" in the topic (title, summary or keywords) of the documents, existing in the WoS database

Source: Authors' contribution based on data available on WoS database

Continuing with the distribution of the results obtained according to the WoS domain assigned to each record in the Web of Science core collection, it can be seen that out of all 254 possible WoS categories, the articles that are the subject of this research are included in 10 WoS categories. The highest number of scientific documents that contain both terms, "ESG" and "finance" are divided into categories like: "Business Finance" (149 scientific documents), followed by "Green Sustainable Science Technology" (106 scientific documents), "Environmental Studies" (96 scientific documents) etc., as can be seen in Table no. 2, from below.

Table no. 2. Number of scientific papers

Web of Science Categories	Record Count	% of 477
Business Finance	149	31.237
Green Sustainable Science Technology	106	22.222
Environmental Studies	96	20.126
Environmental Sciences	92	19.287
Business	75	15.723
Economics	66	13.836
Management	62	12.998
Law	23	4.822
Engineering Environmental	10	2.096
Social Sciences Interdisciplinary	9	1.887

Source: Authors' contribution based on data available on WoS database

The map presented in Figure no. 3 were made with the following specifications:

- Unit of analysis: All keywords.
- Counting method: Full counting.

- Minimum number of scientific documents required for a country to appear on the map: ten.

From the total of 1965 keywords presented in the total of 477 scientific documents, 58 keywords respected the conditions from above and were classified into 4 clusters. Cluster 1 contains 18 keywords (31% of the total), cluster 2 contains 14 keywords (24% of the total), cluster 3 contains 13 keywords (22% of the total) and cluster 4 contains 13 keywords 22% of the total.

Figure no. 3 shows the interconnections between the selected keywords. The term "ESG" was identified in cluster 3, while the term "finance" was identified in cluster 1. According to the map from above, ESG term seems to be in the centre of the map, according to the number of occurrences.

In cluster 1 (red), keywords such as: corporate, finance, ESG rating, ESG performance, investment, firm, fintech. Thus, it can be noted that the publications whose keywords have been classified in this cluster have focused on research in the field of the role of ESG in investments, confirming that "ESG investment and sustainable business development are interconnected concepts". (Olteanu and Ionașcu, 2023)

In cluster 2 (green), focused on the financial impact of ESG for a company, the most representative keywords are: cost, disclosure, firm value, impact, social, responsibility, environmental performance, companies.

Also, in correlation with other authors findings, can be noted that green finance it is in a close relation with ESG disclosure (Liang and Yang, 2024) as it can be seen from the composition of cluster 3 (blue), that put together keywords like: ESG, green finance, innovation, investors, sustainable development.

Cluster 4 (yellow) is focused on caution, being represented by keywords like: risk, Covid-19, funds, ESG investing, market, returns.

From the division of the keywords in clusters we appreciate that all of three terms, environmental, social and governance are spread along all of the clusters, assuring an uniform map.

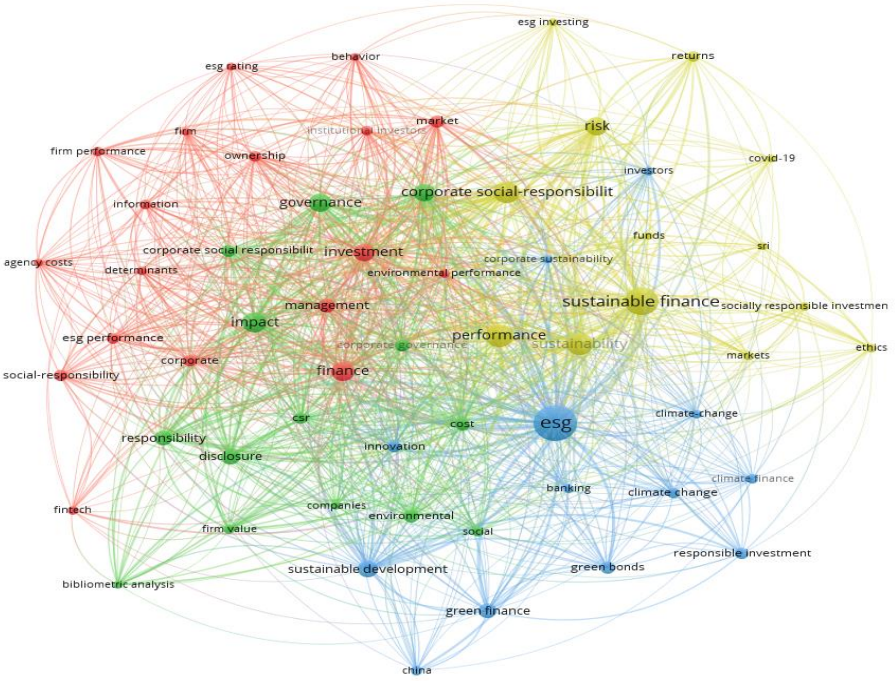

Figure no. 3. Map of interconnections between keywords and clusters
Source: Authors' contribution based on data available on WoS database

China, The Unites States of America, United Kingdom, Italy and Germany are the first 5 countries (taking into account their number of articles) that published articles that contain the both "ESG" and "finance terms in their topics, identified when querying the WoS database (table no. 3). These countries have made the greatest contribution to this research area.

Maybe, the number of scientific papers can be related to the literature review. In the U.S., there's resistance to integrating ESG standards, whereas Europe and Asia call for stronger regulatory measures and public pledges (Ly et al., 2023). "China has incorporated sustainable development strategies into its long-term development plans since the turn of the 21st century" (Zhang et al., 2024). The fact that they published the most articles on ESG and finance can be related to the fact that one third of all A-share listed companies (1130 companies) issued ESG reports in 2021. (Fang et al., 2023)

By authors from Romania, only 8 articles were found in WoS, from which only 3 were published in 2023. This fact shows that this topic is relatively new in Romania. In their paper, Nițescu and Cristea (2020) presented in their paper that the bank industry from Romania looks like are interested in the non-financial reporting regarding ESG, but this strategy can be challenging for the bank market.

Table no. 3. Number of scientific papers depending of the author's country

Country	Record Count	Country	Record Count	Country	Record Count
China	99	Sweden	7	Lebanon	2
USA	61	Denmark	6	Nigeria	2
England	58	Ireland	6	Norway	2
Italy	56	South Africa	6	Peru	2
Germany	30	Hungary	5	Turkey	2
India	28	Portugal	5	Turkey	2
Australia	21	Tunisia	5	Ukraine	2
Canada	19	Czech Republic	4	Chile	1
France	18	Pakistan	4	Croatia	1
Malaysia	17	Saudi Arabia	4	Egypt	1
Russia	17	Taiwan	4	Estonia	1
Spain	14	UAE	4	Finland	1
Netherlands	13	Austria	3	Ghana	1
Belgium	12	Bahrain	3	Iceland	1
Brazil	11	Colombia	3	Latvia	1
Japan	10	Indonesia	3	Liechtenstein	1
Greece	9	Iran	3	Luxembourg	1
Switzerland	9	New Zealand	3	Mexico	1
Poland	8	Qatar	3	Montenegro	1
Romania	8	Vietnam	3	North Ireland	1
Scotland	8	Cyprus	2	Oman	1
South Korea	8	Jordan	2	Philippines	1
Singapore	7	Kuwait	2	Slovakia	1
				Thailand	1

Source: Authors' contribution based on data available on WoS database

Regarding the cooperation between authors in writing of scientific papers related to ESG in finance, the map from the Figure no. 4, generated by the VOSviewer software was used being defined with the following specifications:

- Unit of analysis: countries.
- Type of analysis: co-authorship
- Counting method: Full counting.
- Scientific documents with authors from more than 25 countries have been ignored when generating the map.
- Minimum number of scientific documents required for a country to appear on the map: five.

We proceed with the Bibliographic analysis by examining Figure no. 4, which illustrates the distance between key points on the bibliometric map and the thickness of the lines

connecting them, indicating the relationships between countries. 6 clusters were defined after the generation of the map, as follow:

- cluster 1: Australia, Demark, Germany, Greece, Japan, Sweden, Switzerland;
- cluster 2: Canada, India, Romania, South Africa, South Correa, USA;
- cluster 3: Belgium, Ireland, Scotland, England;
- cluster 4: France, Italy, Portugal, Tunisia;
- cluster 5: Brazil, Netherlands, Russia, Spain;
- cluster 6: Malaysia, China, Singapore.

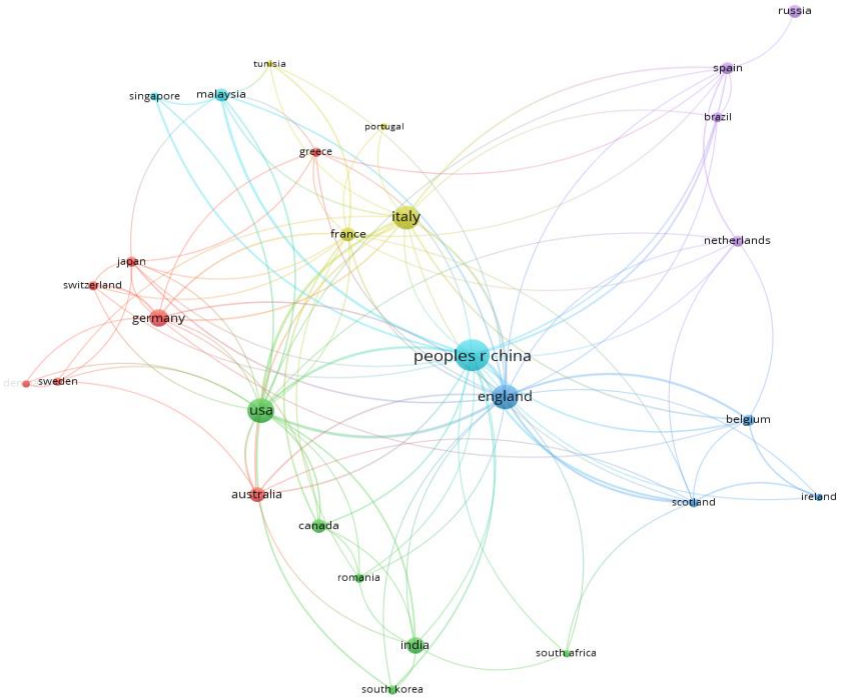

Figure no. 4. Map of Co-authorship network of countries

Source: Author's contribution based on data available on WoS database

To wrap off our investigation into ESG and finance, we also examined co-authorship (figure no. 5) which we found to be extremely useful to show which organisation detain the most scientific paper about ESG an finance in WoS database: University of Oxford.

- Unit of analysis: organisations.
- Type of analysis: co-authorship
- Counting method: Full counting.
- Scientific documents with authors from more than 25 countries have been ignored when generating the map.

- Minimum number of scientific documents required for an organisation to appear on the map: three.

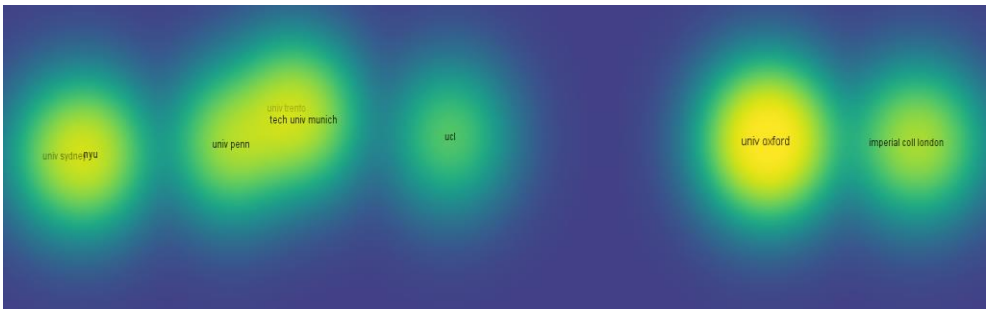

Figure no. 5. Map of Co-authorship network of organisations
Source: Author's contribution based on data available on WoS database

To have an image as complex as possible about the scientific papers that containing both terms "ESG" and "finance" in their topic (title, abstract or keywords), in table no. 4 we highligted the main databases used by the autors in their papers and the main contribution of the authors and the added value that the article brings. For this calitative analysis of the articles we took into consideration the first 10 articles that contain both terms "ESG" and "finance" in their topic and are classified by WoS as being the most cited articles.

Table no. 4. Details about the main articles analysed

The title of the work	Authors and year of publication	Citations	Methodology and the databases used	The main contribution of the paper in the scientific literature
Corporate social responsibility and access to finance	Cheng, B., Ioannou, I. and Serafeim, G., 2014	1,630	"Panel dataset from Thomson Reuters ASSET4 for 2,439 publicly listed firms during the period 2002 to 2009"	The authors (Cheng et al., 2014) investigated if the strategies related to the corporate social responsability (CSR) can provide less capital constraints.
Firms and social responsibility: A review of ESG and CSR research in corporate finance	Gillan, S.L., Koch, A. and Starks, L.T., 2021	617	Theoretical and empirical work, offering a review of ESG and CSR based on the researchs in economics.	This study provide a (Gillan et al., 2021) revised literature about the theoretic and empirical reserchers linked with topics like ESG or CSR.
The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review	Drempetic, S., Klein, C. and Zwergel, B., 2020	385	The ASSET4 database from Thomson Reuters is utilized in author's research, their data set containing 3828 different companies in the period between 2004 and 2015	Throught this research we found out what can be measured through the sustainability ratings and if „sustainable finance community can reach their self-imposed

				objectives with this measurement." (Drempetic et al., 2020)
The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance	Brooks, C. and Oikonomou, I., 2018	332	The focus of this paper is to provide a review of the literature about ESG and their effects to firms value.	The paper otlines the main reserch gaps of the literature and provide a list with topics for future research.
Mandatory CSR and sustainability reporting: economic analysis and literature review	Christensen, H.B., Hail, L. and Leuz, C., 2021	226	This study summarizes the effects of mandatory non-financial reporting (sustainability and CSR) and provide discussions regarding the possible effects of "the current debate on mandatory CSR and sustainability reporting" (Christensen et al., 2021)	This study provides a lot of insights and avenues for future research.

Source: Authors' contribution based on data available on WoS database

Conclusions

In the last more than 50 years, the negative impact of the climate change has increased alarmingly, fact that conducted, among others, to the establish of ESG factors that need to be reported by companies.

The research results indicate a significant increase in the scientific interest in ESG (Environmental, Social, and Governance) in finance, in correlation with the awareness and the current regulations from every country. The query of Web of Science database revealed 477 manuscripts that contain the terms "ESG" and "finance".

The number of scientific papers on the topic of ESG in finance increased year by year started with 2010, in all of the 70 countries analysed, the big concentration of manuscripts being written by authors from China, while the university with the high weigh of articles is University of Oxford. From the total of 1965 keywords presented in the 477 scientific documents, 58 keywords were analysed and classified into 4 clusters.

The importance of this paper is that bring an updated image of the ESG in finance, this paper involving a bibliometric analysis (quantitative research method), using the information obtained from querying the existing database on the Web of Science platform. The data underwent integration and processing within the VOSviewer software, culminating in the acquisition of the subsequent research outcomes. Taking into account the regularisation there here is a growing recognition of the importance of research that can help to improve the use of data provided by the non-financial reports that companies have to submit.

Querying the WoS database, can be observed that a large part from the articles that contain both "ESG" and "finance" are referring to "digital finance". We consider that this subject can be a research subject for the future.

Acknowledgment
This paper was co-financed by The Bucharest University of Economic Studies during the PhD program.

References
[1] Au, A. K. M., Yang, Y. F., Wang, H., Chen, R. H., & Zheng, L. J.,2023. Mapping the Landscape of ESG Strategies: A Bibliometric Review and Recommendations for Future Research. Sustainability, 15(24), 16592.
[2] Barangă, L.P. and Țanea, E.I., 2022. Introducing The ESG Reporting–Benefits and Challenges. Journal of Financial Studies, pp.174-181.
[3] Bergman, M.S., Deckelbaum, A.J., Karp, B.S., Paul, W., Rifkind, W. and Garrison LLP, 2020. Introduction to ESG. Harvard Law School Forum on Corporate Governance.
[4] Brooks, C. and Oikonomou, I., 2018. The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance. The British Accounting Review, 50(1), pp.1-15.
[5] Gillan, S.L., Koch, A. and Starks, L.T., 2021. Firms and social responsibility: A review of ESG and CSR research in corporate finance. Journal of Corporate Finance, 66, p.101889.
[6] Chang, K., Cheng, X., Wang, Y., Liu, Q. and Hu, J., 2023. The impacts of ESG performance and digital finance on corporate financing efficiency in China. Applied Economics Letters, 30(4), pp.516-523.
[7] Cheng, B., Ioannou, I. and Serafeim, G., 2014. Corporate social responsibility and access to finance. Strategic management journal, 35(1), pp.1-23.
[8] Christensen, H.B., Hail, L. and Leuz, C., 2021. Mandatory CSR and sustainability reporting: Economic analysis and literature review. Review of accounting studies, 26(3), pp.1176-1248.
[9] Directiva 2014/95/UE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 October 2014, Available online at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0095 (accessed on 4 April 2024).
[10] Directiva (UE) 2022/2464 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 December 2022, Available online at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022L2464 (accessed on 4 April 2024).
[11] Du, Y., Zhang, J. and Deng, H., 2023. Environmental, Social and Governance (ESG), financing constraints, and enterprise value. Transformations in Business & Economics, 22.
[12] Drempetic, S., Klein, C. and Zwergel, B., 2020. The influence of firm size on the ESG score: Corporate sustainability ratings under review. Journal of business ethics, 167(2), pp.333-360.
[13] EBA report on ESG risk management and supervision,2023. Available online at: https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/

Reports/2021/1015656/EBA%20Report%20on%20ESG%20risks%20management%20and%20supervision.pdf (accessed on 4 April 2024).
[14] Fang, M., Nie, H. and Shen, X., 2023. Can enterprise digitization improve ESG performance?. Economic Modelling, 118, pp.106101.
[15] Fometescu, A. and Hațegan, C.D., 2023. Non-Financial information reporting: Literature review in a bibliometric examination., The Journal of Financial Studies, VIII (Special Issue), , pp.67-80.
[16] Friedman, H.L., Heinle, M.S. and Luneva, I., 2021. A theoretical framework for ESG reporting to investors. Available at SSRN 3932689.
[17] Gigante, G., Sironi, E. and Tridenti, C., 2023. At the Frontier of Sustainable Finance: Impact Investing and the Financial Tradeoff; Evidence from Private Portfolio Companies in the United Kingdom. Sustainability, 15(5), p.3956.
[18] Global reported natural disasters by type", part of the following publication: Hannah Ritchie and Pablo Rosado,2022. - "Natural Disasters". Data adapted from EM-DAT, CRED / UCLouvain. Retrieved from https://ourworldindata.org/grapher/natural-disasters-by-type.
[19] Godin, B., 2006. On the origins of bibliometrics. Scientometrics, 68(1), pp.109-133.
[20] Green Central Banking, 2024. , Available online at:https://greencentralbanking.com/2024/02/23/china-stock-exchange-disclosure-rules/ (accessed on 1 April 2024).
[21] Hao, N. and Dragomir, V.D., 2023. Effects and Limitations of the Implementation of the Non-Financial Reporting Directive (2014/95/EU). Accounting and Management Information Systems AMIS 2023, p.73.
[22] Ilhan, E., Krueger, P., Sautner, Z. and Starks, L.T., 2023. Climate risk disclosure and institutional investors. The Review of Financial Studies, 36(7), pp.2617-2650.
[23] Liang, Z. and Yang, X., 2024. The impact of green finance on the peer effect of corporate ESG information disclosure. Finance Research Letters, 62, p.105080.
[24] Ly L., Hall L., Bastit B., Ellis T., Munday P., Thomson B, Sugrue D., Whieldon E., Laidlaw J., S&P Global, 2023. Key sustainability trends that will drive decision-making in 2023, Available online at: https://www.spglobal.com/esg/insights/featured/specialeditorial/key-sustainability-trends-that-will-drive-decision-making-in-2023, (accessed on 01 April 2024).
[25] Madaleno, M., Dogan, E. and Taskin, D., 2022. A step forward on sustainability: The nexus of environmental responsibility, green technology, clean energy and green finance. Energy Economics, 109, p.105945.
[26] Mo, Y., Che, Y. and Ning, W., 2023. Digital finance promotes corporate ESG performance: Evidence from China. Sustainability, 15(14), p.11323.
[27] Mu, W., Liu, K., Tao, Y. and Ye, Y., 2023. Digital finance and corporate ESG. Finance Research Letters, 51, p.103426.
[28] Nițescu, D.C. and Cristea, M.A., 2020. Environmental, social and governance risks–new challenges for the banking business sustainability. Amfiteatru Economic, 22(55), pp.692-706.

[29] Olteanu, A.L. and Ionașcu, A.E., 2023. Navigating the ESG Landscape and Its Impact in the Business and Investment Sector. Journal of Financial Studies, 8(15), pp.144-158.
[30] Park, Y.S. and Lee, H.S., 2023. The Roles of Finance in ESG Management. Asia-Pacific Journal of Financial Studies, 52(3), pp.354-373.
[31] Pay, P. and Yu, T., 2023. A survey on ESG: investors, institutions and firms. China Finance Review International.
[32] Qian, S. and Yu, W., 2024. Green finance and environmental, social, and governance performance. International Review of Economics & Finance, 89, pp.1185-1202.
[33] Redondo Alamillos, R. and de Mariz, F., 2022. How can European regulation on ESG impact business globally? Journal of risk and Financial Management, 15(7), p.291.
[34] Senadheera, S.S., Gregory, R., Rinklebe, J., Farrukh, M., Rhee, J.H. and Ok, Y.S., 2022. The development of research on environmental, social, and governance (ESG): A bibliometric analysis. Sustainable Environment, 8(1), p.2125869.
[35] Van Eck, N. and Waltman, L., 2010. Software survey: VOSviewer, a computer program for bibliometric mapping. scientometrics, 84(2), pp.523-538.
[36] Wong, W.C., Batten, J.A., Mohamed-Arshad, S.B., Nordin, S. and Adzis, A.A., 2021. Does ESG certification add firm value?. Finance Research Letters, 39, p.101593.
[37] Xue, Q., Wang, H. and Bai, C., 2023. Local green finance policies and corporate ESG performance. International Review of Finance, 23(4), pp.721-749.
[38] Yadav, M., & Saini, M., 2023. Environmental, social and governance literature: a bibliometric analysis. International Journal of Managerial and Financial Accounting, 15(2), 231-254.
[39] Zhang, C., Zhang, S., Zhang, Y., Yang, Y. and Lan, K., 2024. Does Green Finance Policy Contribute to ESG Disclosure of Listed Companies? A Quasi-natural Experiment from China. SAGE Open, 14(1), p.21582440241233376.